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[www.computerworld.com](http://www.computerworld.com)

## Seven Things to Love About Vista Networking

**OPERATING SYSTEM:** Microsoft's next-generation operating system includes better gadgets, wireless capabilities and search and file-sharing tools, says reviewer Preston Gralla.

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## Managing Mobile Misuse

**MOBILE/URLS:** With audio, video, pornography and gambling available on mobile devices, you should closely manage what employees do with these gadgets when they leave the office.

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## Review: RIM Reinvigorates The BlackBerry

**MOBILE/URLS:** Research In Motion's BlackBerry Pearl meets all the demands of the business executive, but its competitive price and features like a camera phone and a video player will also attract your gadget-loving customer after age.

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## Don't Freak Out About ITIL

**STANDARD:** ITIL is not a mandate, writes Steve Dupleix. It is worth taking a step back to figure out what's really being asked of us.

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## Storage Thin Work

**PERFORMANCE:** The latest media report discusses Fujitsu's new petabyte disk arrays, and a looming security risk for certain types of USB drives. Listen to the program online, or download the program to your MP3 player. © [www.computerworld.com/storage/storage薄work](http://www.computerworld.com/storage/storage薄work)

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## AT DEADLINE

### House, Senate Bills Push Paper Ballots

Last week, Rep. Rush Holt (D-N.J.) introduced a bill that would provide funds to voting jurisdictions that print paper ballots for voters who prefer not to cast their votes on touch-screen machines in elections next month. Similar legislation was introduced in the U.S. Senate by Sen. Barbara Boxer (D-Calif.).

### Microsoft Ships Beta Of Forefront Tool

Microsoft Corp. has released a test version of its new Forefront Security for SharePoint software, which will support upcoming versions of Microsoft's portal software. The beta code will allow IT administrators to plug as many as five antivirus scanning engines into SharePoint Server 2007 and SharePoint Services 3.0 in order to root out malicious or unwanted documents. The tool is based on the Antigen software Microsoft gained through its June 2005 acquisition of Symantec Software Inc.

### Uwe Harold Named CIO At SAP AG

Uwe Harold has been named CIO at SAP AG, replacing Carol Wilson, who left the company to join Tata Consultancy Services Ltd. earlier this year after three years at SAP. Harold, who officially joins SAP this week, will also have a seat on the company's board of directors. Harold reports to Claus Heterich, one of SAP's executive board members. Harold was previously CIO at German automotive supplier Bosch Fahrzeugtechnik GmbH.

### IBM Wins \$140M Australian Pact

The Australian Department of Immigration and Multicultural Affairs has awarded a three-year, \$140 million contract to IBM to provide core technology services for the agency's Systems for People project. The contract calls for IBM to build tools that will let department staff access core information systems.

# Microsoft Hastens IE Flaw Fix

## Widely available exploit prompts fast response

**M**ICROSOFT CORP.'s decision last week to issue an out-of-cycle patch for an Internet Explorer flaw appears to have quashed concerns about widespread system disruptions resulting from the vulnerability.

The flaw occurs in the way IE browsers handle Vector Markup Language (VML) graphics and could give attackers complete control of compromised systems.

The flaw was first reported by Sunbelt Software Inc. in Clearwater, Fla., on Sept. 18, and attempts to exploit it began soon afterward.

Concerns began mounting

when exploit code targeting the vulnerability started becoming available publicly through hacking sites such as xsec.org, milw0rm.com and the public domain Metasploit Project.

Adding to the concern, VeriSign Inc.'s iDefense unit reported last week that more than 1,800 Web domain hosting servers had been hijacked via a proxy hack and then used to redirect users to Web sites hosting VML exploits.

### A 'Political Decision'

Microsoft insisted that actual attacks and customer impact were limited. But it decided to release the patch ahead of its usual monthly schedule because of the existence of public exploit code, the company said in a statement.

The early fix was more of a "political decision than any-

thing else," said Hugh McArthur, director of information systems security at Online Resources Corp., an online bill processing firm in Chantilly, Va. "But kudos to Microsoft for getting it out so quick."

McArthur added that even before Microsoft made the patch available, "a lot of the controls that folks already have in place effectively dealt with" the VML flaw. "It was an issue that needed to be addressed, but certainly I think it was overhyped," he said.

A security manager at a Utah-based credit union who asked to remain anonymous said his company deployed the VML patch soon after it was released, as is routine practice. "I'm happy with early releases so long as they test these things out before releasing them so it doesn't crash our systems," he said.

For Microsoft, this is the second time this year it has issued a fix ahead of its usual monthly schedule. In January, the company had to quickly provide a patch for a flaw in its Windows Metafile (WMF) function after exploits began circulating widely.

As with the WMF flaw, a third-party group of security researchers—in this case, Zero-Day Emergency Response Team, or ZERT—rushed out a VML patch ahead of Microsoft's own in response to growing customer concern.

"As with WMF, this was becoming a big public relations problem for Microsoft," said Johannes Ullrich, chief technology officer at the SANS Institute's Internet Storm Center in Bethesda, Md. "A lot of people were questioning why the company was waiting so long to issue a fix for it."

## IBM Gives IT Services a Product Makeover

### Shifts its focus to packaged offerings that can be repeated for different users

**BY NATE HAMBLETON**  
IBM last week formally announced a major change in the way it will sell its portfolio of IT services, rolling out the first two of more than 30 "service products" that it expects to begin offering by year's end.

The initiative is aimed at turning IBM's customized services into standardized, productlike offerings that can be repeated at different user sites, according to Maria Viveros, director of a new integrated communications services unit within IBM Global Services.

"It's almost like a cookie cutter," Viveros said, although she added that IBM still expects about 30% of its work on individual projects to be devoted to customization efforts. The packages unveiled last week are networking services designed to help IT managers

with IP network convergence and IP telephony projects. But an IBM spokesman said that by year's end, the company will announce service products across the entire range of its services portfolio.

### Getting to Know You

Christopher Smith, IT director for the Bath Central School District in Bath, N.Y., said he understands how IBM might be able to generalize the work it does on projects such as voice-over-IP installations.

But Smith questioned whether the school district—which has used \$1.5 million over the past three years on a converged voice and data network, with IBM as its systems integrator—would still get enough hands-on guidance from the IBM workers who know his specific needs.

"The beauty of working with

IBM Global Services has been having the same main contact person the entire time," he said. "I hope that wouldn't change with the new system."

David Komaromi, manager of technical services at Fraser Milner Casgrain LLP, a law firm in Toronto, said he has been working with IBM on an IP network-convergence project for more than two years.

Komaromi said he has benefited from IBM's close relationship with his firm during the \$1.5 million project.

But he added that he sees the value of taking proven methodologies and creating more standardized services for new customers.

"I don't see their service products idea as a rigid approach," Komaromi said. "There will always be that level of customization."

IBM didn't release pricing information on the two networking services. But Bob Djurdjevic, an analyst at Annex Research in Scottsdale,

**“The beauty of working with IBM Global Services has been having the same main contact person the entire time. I hope that wouldn't change with the new system.”**

**CHRISTOPHER SMITH**  
IT DIRECTOR, BATH CENTRAL SCHOOL DISTRICT

Ariz., predicted that overall costs will be reduced for customers and that projects will be completed more quickly.

"Rather than reinvent the wheel, you can put together the basics," Djurdjevic said. He added, though, that the new approach will impose a large cultural change on IBM's IT services workers and sales force.

Wu Zhou, an analyst at IDC in Framingham, Mass., said that IBM's service product strategy appears to be the first on the market, although he added that "the idea is bubbling up in the industry."



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# BI Competency Centers Arise to Guarantee Corporate Investments

## Aim of new groups is to bring business users into the process

BY HEATHER HAVENSTEIN  
LAS VEGAS

**A**S PART of its preparation to acquire TD Waterhouse Group Inc., Ameritrade Holding Corp. last April launched a business intelligence competency center made up of business users whose charter is to make sure the company's BI investments yield results.

The notion of a BI competency center is growing as companies seek a formalized mechanism to shepherd the expansion of BI and ensure that investment matches business needs, according to IT managers at Computerworld's BI Perspectives conference here last week.

M.C. Sankar, vice president of enterprise applications development at what is now called TD Ameritrade Holding Corp. in Omaha, said his company is building the competency center at its works to embed BI analysis about clients into front-line workers' processes. The center, which TD Ameritrade operates virtually, is key to supporting the company's efforts to make decisions based on BI analysis, he added.

"Business users have to become part and parcel of this process," he said. "The competency center is the basic framework that will make our BI investment work."

### Need for Capabilities

Creation of the company's competency center was prompted by the need for more advanced BI capabilities to include the client base Ameritrade is gaining through TD Waterhouse. The compe-

tency center is made up of 10 representatives from different areas of the business who spend 40% to 50% of their time working for the center.

The team is responsible for gathering requirements for BI projects, designing those projects and prioritizing them. One of its first tasks is coming up with common metadata — or data definitions — that users from finance, human resources, sales, marketing and other departments can agree on, Sankar said. Members can also communicate to IT any problems their lines of business might have with a project.

"They become passionate about this, and they take it

back to their business units," Sankar said. "It creates that collaborative force... that will help us anticipate the needs of BI."

Bonnie Smith, division vice president of IT and business consulting at Abbott Labora-

tories, said the company is now finalizing efforts to launch a competency center to examine BI investment and best practices.

The need for the center arose from a realization late last year that IT investments in BI and data warehousing made

by the Abbott Park, Ill.-based company were not being coordinated, she said.

"We had a lot of spending that was disconnected, [and] we said, 'We are going to stop the madness,'" Smith said. "BI is all around... pulling

out key pieces of information and bundling them together so you can make use of them."

Raytheon Missile Systems is working on a BI competency center project that it began in July and is aiming to expand to Raytheon Co.'s other six business units, said Mark Westergaard, BI manager of the missile systems unit in Tucson, Ariz.

The goal of the center is to provide a strategy to create a best-in-class BI environment and to align that strategy to key business initiatives and needs, Westergaard said.

"BI wasn't well known outside of IT," he said. "We had a lot of explaining to do, a lot of evangelizing."

Beginning next month, the Raytheon center will be launching several pilot projects, including ones to track

and analyze defects and cycle times in manufacturing using a new standard BI architecture developed by the center.

Initially, the company will use consultants to staff the center, but it plans to move its own employees into those roles later, he added. The work of the center has already allowed Raytheon to identify previously hidden pockets of BI expertise.

"We've found all kinds of people with special skills that we can now align, where we used to go out and hire somebody," Westergaard said.

Ora Fish, data warehouse manager at Rensselaer Polytechnic Institute in Troy, N.Y., said the university has a steering committee made up of nine representatives from different end-user departments that functions as a BI competency center.

"You absolutely must have people who are accountable for the success of BI and who are dedicated full-time to this," she said. ■



**SANKAR** (BI) TD Ameritrade Holding Corp. is building a competency center to embed BI analysis about clients into front-line workers' processes.



**SMITH** (BI) Abbott Laboratories is finalizing efforts to launch a competency center to examine BI investment and best practices.



## Data Governance, Exec Buy-in Are Keys to BI Adoption

LAS VEGAS

**MANAGING OUT** data governance policies and getting executive buy-in are two of the thorniest issues companies tackle when entering business intelligence throughout the organization, according to attendees at the Computerworld BI Perspectives conference here last week.

Dorothy Winters, global chief technology officer of PepsiCo Inc., said the Purchase, N.Y.-based company is in its fourth year of an IT transformation project to connect its different architectures. The project also calls for building a single data warehouse for all of the company's divisions and brands.

"This is not a technology play," she said. "If the business isn't the owner of all this information, you end up with a mapping mess."

In addition, the company is using an enterprise service bus and Web services to help link disparate systems and applications without har-

ing to hard-code with point-to-point integrations, Winters added.

The enterprise data warehouse becomes the cornerstone — it is designed right — to be the single version of the truth... by using your connectivity strategy," she said.

McKesson Corp. is also working on a data governance structure as part of its BI effort, said Brian Hickie, vice president of BI at McKesson.

The San Francisco-based pharmaceuticals distributor has tapped business users — such as those that work on the sales-to-cash process — as the carriers and stewards of the data, he said.

The company's effort to tune its processes with BI data, Hickie added, has helped vendors better understand where they fit into those processes.

"The decisions are now being based... on a more comprehensive

understanding of their process," he said.

In an informal electronic poll of attendees at the conference last week, 40% of those surveyed said that effective management of change, which includes maintaining data consistency and common data definitions, is one of the most common challenges to the "democratization of BI."

In another poll, 45% of users said that top management isn't understanding the value of BI is the biggest cultural barrier to adoption. IT managers have taken

various paths to gain management buy-in to their BI projects. At 1400-Flowers.com Inc. in Carle Place, N.Y., for example, Eric McKel, senior vice president and COO, said a handful of initial quick success stories was key to getting executive support.



**WINTERS** (BI) PepsiCo Inc. is in its fourth year of an IT transformation project to connect its different architectures.

Mical showed executives five metrics, such as gross margin and profitability, that they didn't have access to before the BI project.

"Pick a handful of metrics that are meaningful, [and] they will ask more questions," he said.

Braggory Corrigan, vice president of PPH Air in Sparks, Md., pointed several case studies that showed tangible results that BI could bring to the company. He said the studies "crystallized" the need for the technology in the minds of executives.

Now, the first management company is using BI analytics to show clients how it is meeting its service-level agreements, explained Corrigan.

In addition, PPH Air in the past six months has begun using BI data to predict when a vehicle will break down and how much that breakdown would cost a client so the customer can take steps to avoid the expense, he added.

— HEATHER HAVENSTEIN



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## IBM, Lenovo Recall 526,000 Laptops

IBM and Lenovo Group Ltd. are recalling 526,000 Sony Corp. batteries for ThinkPad notebooks. The companies said they are responding to reports of a ThinkPad battery smoke and catching fire as a user was boarding a plane at Los Angeles International Airport last month. The batteries were installed in ThinkPad laptops sold between February 2005 and September 2006.

## Sun to Purchase ID Management Firm

Sun Microsystems Inc. has agreed to buy Neogent Inc. for an undisclosed sum. Neogent develops automated software tools designed to speed the implementation of identity management systems. The tools are based on Sun's Java System Identity Manager software. The acquisition is expected to close by year's end, and Neogent's operations will be folded into Sun's services division.

## Ambient, Utility Sign BPL Agreement

Ambient Corp., a provider of broadband over power-lines systems, has signed an expanded deployment agreement with utility Duke Energy Corp. Ambient will offer connectivity to about 8,000 homes in Charlotte, N.C., providing high-speed transmission and reception of data and voice via electric power lines.

## IBM Opens Dublin Venture Center

IBM has launched a venture capital center in Europe. The Dublin-based operation will link European start-up companies with venture capital firms. The center is IBM's first VC office outside of the U.S. IBM said it doesn't intend to invest in any of the participating start-ups directly, but it might, in rare cases, consider buying a company that's developing technology fundamental to its business.

# Audit Finds DOE Still Lacks Strong Cybersecurity Protection

Cites 27% increase in 'significant' data compromises

BY LINDA ROSENKRANCE

**T**he U.S. Department of Energy still hasn't done enough to strengthen its cybersecurity protections, exposing critical systems to compromise and putting data at risk, according to a report issued last month by the agency's inspector general.

In his annual report on the status of the agency's cybersecurity efforts, Inspector General Gregory Friedman told the DOE has taken some steps to strengthen its security practices. However, the audit also found that key vulnerabilities persist, including some that the inspector general's office and a congressional committee have highlighted in the past.

The agency has received Gilling grades for its cybersecurity efforts in each of the past five years in a report card issued by the House Committee on Government Reform and its chairman, Rep. Tom Pappas (R-Va.). Only the U.S. Department of Agriculture has had a record as bad as the DOE's over the past five years, as noted by the committee. The DOE audits its cybersecurity programs each year as required under the Federal Information Security Management Act of 2002.

## Steps to Be Taken

Friedman listed several steps in the report that the agency must take before it can adequately protect its data and information systems.

They include taking an inventory of all department information systems, devising contingency plans to ensure that some critical systems can continue or resume operations



## Evaluation Report

The Department's Unclassified Cyber Security Program—2006

The inspector general's annual report on the DOE's cyber security efforts said data is still at risk.

in the event of an emergency or disaster, and shorting up existing security weaknesses to prevent unauthorized system modification or the loss of information.

During fiscal 2006, which ended last week, the report said, the DOE "did not always implement or properly execute

existing department and federal cybersecurity requirements. In a number of instances," it noted, "cybersecurity weaknesses... were not addressed in a timely manner or tracked to resolution."

Therefore, Friedman said,

"the department's information systems and networks and the data they contain remain at risk of compromise."

The evaluation found that during fiscal 2006, "the department had been subjected to 12 significant cybersecurity incidents, consisting primarily of attempts to com-

promise information by unauthorized users, malicious code and worms." The total represented a 22% increase over fiscal 2005, the report said.

A year ago, a hacker compromised the Social Security numbers and other personal data of 1,500 DOE employees and contract workers.

Friedman did note that the department has started implementing a cybersecurity revitalization plan and called on DOE officials to focus that plan on eliminating the problems cited in the report.

In a written response to the report, DOE CIO Thomas Pyke said his department continues to work on improving its cybersecurity practices. Officials did not respond to requests for further comment on the report. ■

## VA Adds Encryption Software to 15,000 Laptops

**THE U.S. DEPARTMENT OF Veterans Affairs** installed encryption software on some 15,000 agency-owned laptops over the past two weeks—part of a broad effort to improve information security following last May's massive data compromise.

The VA is also in the process of supplying government-owned laptops to employees who use their computers to do agency work at home, Robert Howard, VA supervisor of information and technology, told federal lawmakers last week. Howard detailed the VA's latest security measures to the U.S. Senate Committee on Veterans' Affairs during confirmation hearings on his nomination to the new VA post of assistant secretary for information and technology, which will oversee the agency's newly centralized 4,600-person IT operation.

In August, President Bush nominated Howard, who has been supervisor of the VA's IT office since May. If confirmed, he will be the first

DOO-level executive at the agency to be an assistant secretary.

So far, encryption software has been installed on all but about 100 VA laptops, Howard said. The software is used to prevent the misuse of sensitive data, he said.

The agency is working with its hardware suppliers and encryption software vendors—GuardianEdge Technologies Inc. and Trust Digital Inc.—to sort out technology issues that have prevented the encryption software from being installed on the remaining systems, Howard said.

VA officials in August announced plans to spend \$3.7 million to install data encryption software on the department's laptops, desktop computers and portable storage media, such as flash drives and CDs.

The encryption measures are part of a broad security effort undertaken by the VA following the May breach, which caused sensitive data of more than 25.5 million veterans to be exposed. The data was stored on a laptop computer that was stolen

from a private residence and later recovered. Investigators said there was no evidence the data was ever actually accessed.

Since then, the agency has also installed tools to manage and restrict use of USB storage devices, such as memory sticks, on VA systems, Howard said.

An agencywide security assessment program has so far yielded a 322-item action plan that Howard called a "living document" that will guide our work. He added that "its successful implementation is without doubt my highest priority."

Andrew Jaquith, an analyst at Yankee Group Research Inc., said the VA appears to be on the right track to improve its operations.

Over the long term, Jaquith suggested, the agency should consider moving sensitive data off laptops entirely. Encryption alone is "a bit like supplying a drunkard with terrific hangover medicine rather than telling him to stop drinking," he said.

—JAKUBOWSKI/VA/AN



## BRIEFS

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IBM and Lenovo Group Ltd. are recalling 526,000 Sony Corp. batteries for ThinkPad notebooks. The companies said they are responding to reports of a ThinkPad emitting smoke and catching fire as a user was boarding a plane at Los Angeles International Airport last month. The batteries were installed in ThinkPad laptops sold between February 2005 and September 2006.

**Sun to Purchase ID Management Firm**

Sun Microsystems Inc. has agreed to buy Neagot Inc. for an undisclosed sum. Neagot develops automated software tools designed to speed the implementation of identity management systems. The tools are based on Sun's Java System Identity Manager software. The acquisition is expected to close by year's end, and Neagot's operations will be folded into Sun's services division.

**Ambient, Utility Sign BFL Agreement**

Ambient Corp., a provider of broadband-over-power-line systems, has signed an expanded deployment agreement with utility Duke Energy Corp. Ambient will offer connectivity to about 6,000 homes in Charlotte, N.C., providing high-speed transmission and reception of data and voice via electric power lines.

**IBM Opens Dublin Venture Center**

IBM has launched a venture capital center in Europe. The Dublin-based operation will link European start-up companies with venture capital firms. The center is IBM's first VC office outside of the U.S. IBM said it doesn't intend to invest in any of the participating start-ups directly, but it might, in rare cases, consider buying a company that's developing technology fundamental to its business.

# Audit Finds DOE Still Lacks Strong Cybersecurity Protection

Cites 22% increase in 'significant' data compromises

BY LINDA MOSKOWITZ

**T**HE U.S. Department of Energy still hasn't done enough to strengthen its cybersecurity protections, exposing critical systems to compromise and putting data at risk, according to a report issued last month by the agency's inspector general.

In his annual report on the status of the agency's cybersecurity efforts, Inspector General Gregory Friedman did note that the DOE has taken some steps to strengthen its security processes. However, the audit also found that key vulnerabilities persist, including some that the inspector general's office and a congressional committee have highlighted in the past.

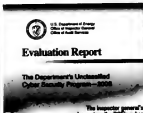
The agency has received failing grades for its cybersecurity efforts in each of the past five years in a report card issued by the House Committee on Government Reform and its chairman, Rep. Tom Davis (R-Va.). Only the U.S. Department of Agriculture has had a record as bad as the DOE's over the past five years, as noted by the committee.

The DOE audits its cybersecurity programs each year as required under the Federal Information Security Management Act of 2002.

**Steps to Be Taken**

Friedman listed several steps in the report that the agency must take before it can adequately protect its data and information systems.

They include taking an inventory of all department information systems, devising contingency plans to ensure that some critical systems can continue or resume operations



The inspector general's annual report on the DOE's cybersecurity efforts said data is still at risk.

in the event of an emergency or disaster, and shoring up existing security weaknesses to prevent unauthorized system modification or the loss of information.

During fiscal 2006, which ended last week, the report said, the DOE "did not always implement or properly execute

existing departmental and federal cybersecurity requirements. In a number of instances," it noted, "cybersecurity weaknesses... were not addressed in a timely manner or tracked to resolution."

Therefore, Friedman said,

"the department's information systems and networks are at risk of compromise."

The evaluation found that during fiscal 2006, "the department had been subjected to 132 significant cybersecurity incidents, consisting primarily of attempts to com-

promise information by unauthorized users, malicious code and worms." The total represented a 22% increase over fiscal 2005, the report said.

A year ago, a hacker compromised the Social Security numbers and other personal data of 1,500 DOE employees and contract workers.

Friedman did note that the department has started implementing a cybersecurity revitalization plan and called on DOE officials to focus that plan on eliminating the problems cited in the report.

In a written response to the report, DOE CIO Thomas Pyle said his department continues to work on improving its cybersecurity practices. Officials did not respond to requests for further comment on the report. ■



INFRASTRUCTURE 101

\_DAY 15: Our network's too complex to manage. We're not proactive at all; we're just reacting. Help!

\_Gil brought in a crystal ball. Says he can now peer into the future of our infrastructure.

\_DAY 17: I see a better way: IBM Tivoli middleware. It gives us a holistic view of the infrastructure and analyzes the relationship between apps, systems and networks. Fixes problems proactively for more uptime and more storage availability. Plus, it's open, modular and scalable.

\_Gil says he saw all that too but forgot to tell us.

IBM

Tivoli

TAKEBACKCONTROL

## Continued from page 1 HP Scandal

Hurd's response could determine "whether he is the right person to lead HP," Naylor said. "He is being challenged in areas that he has not been challenged before. The way he handles this will probably dictate the future of the company."

Users should be paying attention to the scandal, Naylor added. "It's on my radar because of the Enron investigation and the subsequent result of the need to be sensitive to these types of things," he said.

Hurd "has been a real change agent at HP, and we see him as responsible for improved performance of the company," said Peter Walton, CIO at Amerasia Hess Corp. He said that Hurd has the right team in place — citing CIO Randy Mott in particular — and that the changes made by Hurd are becoming institutionalized at HP. The scandal is a distraction that could hurt

## HP Hearing Puts Spotlight on Call for Stricter Privacy Laws

BY MICHAEL WATSON

**CONGRESSIONAL INTEREST** in Hewlett-Packard's scanning scandal goes well beyond the company's offices and into the heart of privacy laws.

HP faces several state and federal investigations over its efforts to plug loopholes in laws by hiring an outside company that used pretexting — impersonating a customer — to gain the phone records of local members and other journalists.

At last week's hearing by a U.S. House Energy and Commerce subcommittee, HP officials got a longer-talking time from lawmakers, but the hearing also drew attention to proposed federal legislation that would narrow pretexting, which many states have already done.

At the hearing, lawmakers repeatedly asked the panel that pretexting is already wrong. "Where was someone to say this just isn't right?"

asked Rep. Greg Walden (R-Ore.). "Is not, the symptoms of pretexting is lying — I'm going to be to someone else so I can get information on someone else."

HP's legal team never took the witness stand to explain its role, leaving Patricia Dunn, the former HP board chairman who initiated the investigation, to take the heat of the committee's wrath. Dunn insisted that she didn't know until after the investigation that pretexting was employed, and she said she relied on the legal team's assessment that the investigation was legal.

Mark Ruffalo, executive director of the Electronic Privacy Information Center in Washington, has previously urged Congress to make pretexting a federal crime. "The law is incomplete in this area, and it varies from state to state," he said.

Hearings said Congress should pass a law that continues criminal



Guest HP CEO Mark

at the House Energy and Commerce subcommittee. Several HP officials said that the data breach and the way HP dealt with it after the scandal broke in 1999.

pretexting should remain lawful, but also engage in pretexting with strategic objectives for legitimate companies to protect their data.

Privacy advocates support pending legislation that would restrict the use of the Social Security number as a unique identifier.

"Social security numbers should not be used as a unique identifier of this point, and they should not be used to authenticate people," said An Schwartz, deputy director of the Center for Democracy and Technology in Washington.

—PATRICK THORP/DAU

HP's stock price but not necessarily the company's performance, Walton said.

But, Walton added, "if it turns out that Mark has operated knowingly with anything less than flawless integrity, we would have some issues with HP going forward."

Hurd maintained that he

had only partial information about the leak probe and that he failed to dive into the details. "I wish I had asked more questions," Hurd testified.

Martin Reynolds, an analyst at Gartner Inc., said the investigation is focusing more on the people involved than on the company. "This is a ques-

tion of individual accountability, rather than HP's accountability," he said.

In one way, Hurd has gained from the scandal. He was named board chairman after Patricia Dunn's departure and now joins the ranks of other corporate CEOs who are also chairman, including Samuel

Palmisano at IBM, and Jeffrey Immelt at General Electric Co.

Giving Hurd both titles runs counter to the trend in corporate governance. Companies generally favor splitting the two roles, figuring that "having an independent chairman would strengthen the authority of the board over management," said Keith Bishop, a partner at law firm Buchalter Nemer in Los Angeles.

It has been almost a month since the news of HP's probe broke, and for now, most users say the scandal isn't affecting them.

Even if Hurd is preoccupied with the scandal's fallout, the business processes he has established at HP are working, said Robert Fort, IT director at Virgin Entertainment Group Inc. in Los Angeles.

Bill Lewkowicki, CIO at Metropolitan Health Corp. in Grand Rapids, Mich., said the episode could even be healthy for the company, by weeding out dissonance on the board and solidifying management even further. With Hurd occupying both the CEO and chairman roles, "I have even more confidence in the company right now," Lewkowicki said. ■

## 3Com Unveils 24-Port Switch for Small, Midsize Businesses

BY MARY HANDEL

3Com Corp. today is set to introduce a 24-port Gigabit Ethernet switch that combines Power Over Ethernet technology and wireless network control.

The 3Com Unified Gigabit Wireless PoE Switch 24 costs \$2,750 and is designed for small and midsize businesses, said Howard Rubin, marketing manager for the product. Jason Houts, vice president of operations at MTS Inc., a provider of wireless systems to hotels, said his company has been using one of the switches in production for nearly three weeks at its St. Louis headquarters.

MTS is evaluating whether to deploy the switch at hotel

customer sites that have multiple wireless access points. "It's exciting that it might be used to manage dozens of APs in hotel hotels remotely," Houts said.

He also said that the multifaceted switch will likely lower users' operating costs. Houts said the aggressive pricing of the switch should make it attractive to his hotel customers. "The [hospitality] market is not known for big IT budgets," he said.

The new switch from 3Com is also "nice to have as an alternative to Cisco," Houts said.

He noted that 3Com's financial woes and the appointment of a new CEO, Edgar Maer, have not adversely affected his view of the vendor. "To be

honest, the politics behind the company are not as important as the quality of the products and the support," he said.



Zeus Kerravala, an analyst at Yankee Group Research Inc. in Boston, said 3Com's overall technology, management and financial direction is about the same as it was six months ago, when he rated it "poor to fair." In August, 3Com reported a loss of \$900 million on sales of \$795 million for fiscal 2000. It was 3Com's fifth straight year of losses.

"The new CEO has some work to do," Kerravala said, "but they have strong products." Sales of the new switch can't be expected to return 3Com to financial success, he said, but it can help companies "create unified policies across wired and wireless environments." ■





**IBM.**

**\_INFRASTRUCTURE LOG**

**\_DAY 12:** No one can get real-time answers. No one can collaborate. Unmanaged public IM is a security nightmare.

**\_Gil** brought in a "collaboration accelerator." I said it looks like a cannon. He said I had a small mind.

**\_DAY 14:** The answer: IBM Lotus® Sametime® 7.5. It's not just IM and Web conferencing, it's an affordable platform for running the business in real time. It's encrypted. Has tons of features like VoIP and location awareness. And it works seamlessly with leading public IM networks. Everyone has real-time answers now.

**\_We've even recovered most of our employees.**

Download the Lotus Sametime 7.5 demo at:

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# Colorado E-voting OK'd Despite Flaws

Judge rules that election certification process must be fixed over long term

BY MARC L. SOMMER

**A**SASH H. DUD in Colorado last month found the procedures used by the state to test and certify e-voting gear to be wanting—but nevertheless ruled that the machines can be used in the November general election.

Although Judge Lawrence Mazmanian in the state District Court of Denver County decided not to ban the machines from use in the election, he did order the state to create and implement updated security procedures immediately.

At the same time, the judge ordered that broader certification processes be created and used in future elections. He acknowledged that work on

such processes is unlikely to be completed until 2008. Mazmanian was ruling on a lawsuit filed by a group of Colorado voters against Secretary of State Gabe Dennis that challenged the state's process of testing and certifying electronic voting machines.

The judge agreed that Dennis' office did "an abysmal job of documenting their tests or of logging their certification procedures and their tests" prior to the primary. However, he said that he could not conclude that the process certified vulnerable machines.

Despite problems with the state's testing and certification processes, Mazmanian ruled that certifying all of the installed systems six weeks be-

fore an election would create more problems than it would solve.

Andrew Han, an attorney at Denver-based law firm Wheeler Trigg Kennedy LLP, which represented the voter group, called the decision a "major victory" for the plaintiffs. "The repercussions will be felt through the United States," he said.

The initial lawsuit was filed in June and sought to block the use of touch-screen voting machines in the state because of questions about the testing and certification processes and other issues. The suit was amended in July to limit its scope to testing and certification issues.

The voter group contended that Dennis violated Colorado election laws during the certification process, and it questioned the training of the staff

## Failing Grades

In a ruling in a lawsuit contesting e-voting, a Colorado judge found that the state's process for certifying touch-screen machines:

- Did not include an acceptable set of standards.
- Failed to include adequate testing procedures.
- Lacked adequate security procedures.

overseeing the effort.

Han contended that the state's certification tests didn't cover every possible threat to the machines. For instance, he said that some of the machines hadn't been examined to see if they were vulnerable to the insertion of malicious code.

A spokeswoman for Dennis downplayed Mazmanian's crit-

icism of the process and noted that "the judge determined the certification would stand."

The spokeswoman said the secretary of state's office filed plans with the court to create a set of minimum e-voting machine security standards for the November election.

After the initial lawsuit was filed, the Colorado Democratic Party began urging voters to use paper-based absentee ballots rather than e-voting systems in November.

"These machines have been shown to be open to some serious problems," said a party spokesman.

A spokeswoman for Omaha-based Election Systems & Software Inc., one of four suppliers of e-voting machines to Colorado, said the company will work with state election officials to resolve the issues raised by the ruling. ▀

## E-voting Critic Recounts Maryland Primary Woes

BY MARC L. SOMMER

**Avi Rubin** is at the forefront of the e-voting issue. He is a professor of computer science at Johns Hopkins University specializing in e-voting security issues and an elections judge in Maryland's Baltimore County. Rubin also wrote *Brave New Ballot: The Battle to Safeguard Democracy in the Age of Electronic Voting*.

A book released last month that is critical of electronic voting. In an interview with Computerworld last month, Rubin recounted his experience in Maryland's September primary election and lists what he sees as problems with e-voting machines.

**How bad were the e-voting problems during Maryland's primary on Sept. 12, which included a widespread lack of access cards in Montgomery County?** The problems weren't as bad in Baltimore County. The [Diebold]

Election Systems Inc. e-poll books were crashing a lot, and some precincts didn't get their voter access cards. We had 10 minutes of waiting time, and at some point, up to an hour, and that was too long. One voting machine crashed. One froze up when talking the votes, and then 10 minutes later came back online.



**Q&A**

**What are e-poll books?**

They are like a laptop with a smart card and a soft keyboard on the screen where you touch the letters. They control whether or not you get to vote.

**Did the security suit, which is used to prevent tampering, work as promised?** The tamper tape is on the inside of the machine over the bar that holds the memory card. I noticed one machine had frozen, and I couldn't get it to work, so we decided to reboot it. To

get at the on/off switch, we pulled off the tamper tape and opened the bay. Inside, I could see the memory card. I couldn't believe the tape was that easy to get on and off.

**Can the problems you saw with the**

**primary be fixed in time for the November election?** We're a model of democracy, and we have one of the worst voting systems in the world. We're doing every thing in this country to create doubt in the voters' and candidates' minds.

## Diebold: Criticism Off-base

**A DIEBOLD ELECTION SYSTEMS** official fired back at e-voting critic Avi Rubin, calling the Johns Hopkins University professor and Maryland elections judge a "sting agent against e-voting."

Mark Radtke, director of marketing at Allen, Texas-based Diebold, contended that Rubin, an author of a study and a book critical of Diebold e-voting machines, is predisposed to finding that e-voting machines lack adequate security.

Rubin was critical of the security and performance of Diebold electronic voting machines in Maryland's primary election held Sept. 12.

Radtke defended the security

of Diebold's AccuVote TS voting machines used in Baltimore County, where Rubin worked as an election judge during the Maryland primary election.

For instance, he said that the state used to prevent tampering with the AccuVote machine's memory card is commonly used and effective—despite concerns from Rubin that it could be easily removed and replaced.

Radtke said the current version of the AccuVote software supports dynamic passwords. Secure Sockets Layer encryption and two-way authentication to transmit election results. It also relies on a memory

**What can voters do to ensure that their votes are counted?**

First, we should ditch electronic polling books and get voter registration cards. When the voter is done, they put [the voter registration card] in an envelope taped to the machine. We should put something in place in the next seven weeks. ▀

card that is digitally signed.

Radtke acknowledged that the e-poll books cited by Rubin did suffer performance problems during the election. The problems were caused by a technical glitch that made the books reboot themselves frequently. "It was a minor issue and has been rectified," said Radtke.

Radtke also noted that Diebold provided as much hardware support as required for the election. "Our Maryland state contract calls for one technical person for every 15 precincts." He noted that the company also sent out one noncontractual worker for every two precincts to observe the poll opening process and report any problems.

— MARC L. SOMMER



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**BY MARC L. GOODMAN**  
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**of Diebold, America's top voting machine maker in Baltimore County, where Rubin worked as an elections judge during the Maryland primary election.**

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\* Complimentary registration is restricted to qualified IT directors only.

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8:00am to 8:30am

**Registration and Networking Breakfast**

8:30am to 8:40am



**Introduction and Overview**

Ron Milton, Executive Vice President, Computerworld

8:40am to 9:20am

**Market Overview and Trends**

9:20am to 10:00am

**Application Performance at Wayne State University:  
An End User Case Study**

Dr. John S. Camp, Chief Information Officer, Wayne State University

10:00am to 10:15am

**Refreshment and Networking Break**

10:15am to 10:50am

**Application Performance Assurance Case Studies:  
It Pays to be Predictable**

Andrew Hittle, Vice President, Quality Assurance Solutions, Compuware

10:50am to 11:25am

**Application Performance: An End-User Case Study**

Thomas Fontanetta, Senior Vice President, System Development, Warrantech Corporation

11:25am to Noon

**Panel Discussion**

Moderator: Ron Milton, Executive Vice President, Computerworld

Panelists: Dr. John S. Camp, Chief Information Officer, Wayne State University; Thomas Fontanetta, Senior Vice President, System Development, Warrantech Corporation

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**GLOBAL****An International IT News Digest****Digital X-Ray Systems Spreading in the U.K.****LONDON**

**T**HE TROUBLED effort to modernize IT at the U.K. National Health Service is finally finding some success, according to the agency, which said last week that digital X-ray systems are now being used by half of the "trusts" that manage local NHS health care services in Britain.

The NHS has been working to roll out the Picture Archiving and Communications System (PACS) technology for the past 10 years. But the agency said last week that when its IT modernization program was launched 18 months ago, only 24% of the U.K.'s health care trusts had installed PACS equipment.

Now the systems are being deployed at an average rate of six per month, the NHS said, adding that it is on track with a plan to complete PACS deployments at all of its trusts by the end of next year.

The PACS technology replaces film-based X-rays with a digital system that allows medical images to be stored and viewed electronically and makes it possible to send images to other health care facilities via a secure broadband network. PACS can also eliminate film and developing expenses and make light boxes and microfilm readers unnecessary, the NHS said.

The NHS plans to invest more than £1 billion (\$1.5 billion U.S.) in the PACS technology through 2004. Overall, the agency's National Program for IT is expected to cost £12.4 billion (\$23.6 billion) over a 10-year period.

■ JEREMY KIRK, IDG NEWS SERVICE

**Unpaid Bill Prompts Internet Service Cuts****HARARE, ZIMBABWE**

**I**NTERNET ACCESS for users in Zimbabwe has been slowed for about a month because a government-owned telecommunications company hasn't paid a bill from broadband network operator Internet Ltd.

Internet has cut the bandwidth it makes available to internet service providers in Zimbabwe to 10% of the usual capacity because it is owed about \$700,000 (U.S.) by Harare-based TelOne, according to the Zimbabwe Internet Service Providers Association.

"Mail traffic is delayed, and outbound Internet traffic is appallingly slow, [with] many sites unreachable," Nikki Lear, chairman of the association, said last week. The trade group has been lobbying the government-run Reserve Bank of Zimbabwe to resolve the problem with Internet.

"We're working closely with [TelOne] to see what we can do out," said Dianne VanHebe, a spokeswoman for Pembeber, Bermuda-based Internet.

VanHebe wouldn't disclose any details of Internet's negotiations with TelOne, and she declined to say how long the Zimbabwe bill was paid due.

Officials at TelOne and the Zimbabwe embassy in Washington didn't respond to requests for comment.

■ GRANT GROSS, IDG NEWS SERVICE

**Intel to Invest \$40M in Software Vendor****SHERBORNE, CHINA**

**I**NTEL CORP. plans to invest \$40 million (U.S.) in Neusoft Group Ltd. as part of a deal that calls for the Shenyang-based software vendor to optimize its products for systems with Intel microprocessors.

Intel said the agreement, which was announced last week, marks the largest investment made to date by its venture capital arm through a \$200 million fund established last year for investing in Chinese technology companies.

Under the terms of agreement, Neusoft and Intel also will jointly develop the curriculum for a university-level education and certification training program focused on Intel's architecture and tools.

Neusoft develops business management and human resources applications, in addition to running IT training programs in China and providing outsourced software development services for embedded applications.

SAP AG has also invested in Neusoft. It acquired an undisclosed minority stake in the Chinese company in May as part of an agreement under which Neusoft will offer training classes on SAP's products and use SAP's NetWeaver technology in some of its product development efforts.

■ SUMNER LEMON, IDG NEWS SERVICE

**Jailed Chinese Reporter To Sue Yahoo U.S.****HONG KONG**

**A** JOURNALIST JAILED in China last year in part because of e-mail evidence that was provided to the Chinese government by a Yahoo Inc. subsidiary plans to file a lawsuit against the company in the U.S.

A civil suit against Yahoo on behalf of Shi Tao, who is serving a 10-year sentence for divulging state secrets, will likely be filed in a federal court in New York or California within a few months, said Albert Ho, a member of the Legislative Council of Hong Kong and a lawyer for Shi.

"We're trying to line up other victims for a class action," Ho said. He added, though, that for potential plaintiffs, the lawsuit is "a very sensitive issue because there could be reprisals against their families" by Chinese authorities.

Ho said that even though Shi is not a U.S. citizen, he can file a lawsuit in the country under the Alien Tort Claims Act of 1789.

A Yahoo spokeswoman in Hong Kong couldn't be reached for comment last week. In the past, the company has defended its business practices in China by saying that it must follow local laws.

■ DAN NYSTEDT, IDG NEWS SERVICE

**U.S. Outsourcer Opens Third Philippine Facility****MANILA CITY, PHILIPPINES**

**I**CT GROUP INC. in Newtown, Pa., last month opened its third business process outsourcing call center in the Philippines and disclosed plans to set up at least two more BPO facilities in the country next year.

ICT's new facility in Marikina City, near Manila, employs more than 1,400 people. John Brennan, ICT's president, said at a ceremony marking the opening of the facility that by the end of next year, the company expects to have up to five facilities with more than 5,000 staffers in the Philippines.

Brennan said ICT officials currently are identifying and evaluating possible sites, within and outside of metropolitan Manila, for the two additional facilities the company plans to set up.

■ TOM S. NODI, COMPUTERWORLD PHILIPPINES

Compiled by Mike Bucher.

**Briefly Noted**

**AOL LLC** last week announced the sale of its Internet access unit in France to **Free! Capital SA** for \$200 million (\$200 million U.S.). The addition of AOL France SGE gives about 600,000 new customers to France's broadband network operator in Marseille, France. The deal comes less than a week after AOL said its German internet operation in Telekom Italia took for \$675 million (\$675 million U.S.).

■ NANCY BOYDRE, IDG NEWS SERVICE

**Singapore's TelOne** last week said it had secured a \$100 million loan from Citibank to expand its network. Citibank is currently in the U.S. of Singapore's international operations and group said it would offer TelOne, who has handled Shihua since 1998, the company's push into markets beyond Singapore.

■ BURNING BROW, IDG NEWS SERVICE

The U.S. Department of Justice said that a **Samung Electronics** Co. executive agreed to plead guilty and serve jail time for participating in a global price-fixing conspiracy on memory chips. U.S. assistant Thomas O'Connell admitted that he participated in the conspiracy as vice president of marketing for memory products of Seoul-based Samung's U.S. subsidiary in Irvine, Calif.

■ MARG PERRIN, IDG NEWS SERVICE

**UOL** has set up an application services facility in Recife, Brazil, that can support 2,000 servers. The UOL spokeswoman said she had not heard that the company's schedule for staffing the facility. The company announced in June that it plans to invest \$1 billion (U.S.) in Brazil over the next three years.

■ JOHN KESSEL, IDG NEWS SERVICE

**EPAM Systems Inc.** and **United Development Inc.**, a pair of software development outsourcing firms in Lawrenceville, N.J., and Houston, respectively, have agreed to merge. The combined company will operate under the EPAM Systems name, with a workforce of about 2,500 employees and annual revenue in excess of \$70 million.

■ PAVEL KUPRIYANOV, COMPUTERWORLD RUSSIA

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# IBM, Sun Add Encryption to Tape Drives

Both products add long-sought capability to high-end offerings

BY SALMON FISHER

**I**BM and Sun Microsystems Inc. last month each brought out tape drives that can encrypt data, a capability that should help safeguard information on lost or stolen tapes.

Both vendors are adding the capability to high-end tape drives. The IBM TS1020 and the Sun StorageTek Crypto-Ready T10000 each feature a custom chip built-in encryption capability.

Kelly Carpenter, manager of technology services for the Genome Sequencing Center at Washington University in St. Louis, Mo., which runs four Sun T10000 tape drives, said the encryption capability provides a new option for protecting the center's data.

Carpenter said he expects the center to add four of the new T10000 drives with the encryption capability.

The organization is interested in using encryption technologies to protect the human DNA data it catalogs, Carpenter said. He also noted that as the center begins to maintain data on specific people, it must boost compliance with the Health Insurance Portability and Accountability Act.

## Cutting Costs

Bob Venable, enterprise systems manager at Blue Cross and Blue Shield of Tennessee in Chattanooga, said that using tape drives with encryption capabilities built in is less expensive than using stand-alone encryption appliances or software.

Venable also noted that government agencies that his company works with, including the U.S. Department of Health and Human Services' Centers for Medicare and Medicaid Services and the U.S. Department of Defense, may require encryption capabilities in the future.

Because the release of the new functionality coincides with a purchasing cycle at the Blue Cross and Blue Shield operation, Venable said he's planning to replace 40 to 50 IBM 3990 and IBM 3992 tape drives with TS1020 drives.

On its Web site last month, IBM disclosed before the formal announcement plans to add encryption capabilities to tape drives. The company did not say whether the drive-level encryption capabilities will be added to other tape drives.

IBM said that adding the encryption chip to the high-end tape drive will boost the price of the drive by 10%, to \$35,500. The updated drive is available now, IBM said.

At an IBM press confer-



The Sun StorageTek Crypto-Ready T10000 features a custom chip built-in encryption capability.

ence introducing the drive, Kevin Rhoden, CIO at Iron Mountain Inc., said his company has been encouraging its clients to encrypt the tapes they give to Iron Mountain for storage. Many don't encrypt data for a variety of reasons, he said.

Sun's T10000 tape drive can be equipped with encryption capability for \$5,000, said Nigel Dessau, vice president

of storage marketing at Sun. The company began shipping a Fiber Channel version of the T10000 with the encryption functionality last month; it will start shipping a mainframe Fiber Connectivity version by the end of the year, he said.

IBM said it's planning to submit its encryption technology to the Linear Tape Open Consortium for possible use in the next version of the LTO 4 tape specification, which is due next year.

Cindy Grossman, vice president of tape storage systems in IBM, said the company also plans to add encryption capabilities to some undisclosed IBM disk drives. Grossman did not disclose a timetable for the plan.

Both Sun and IBM also announced tools for managing

the keys used for encryption and decrypting data on the tape drives.

IBC analyst Bob Amatruda called the latter announcement significant because corporations have kept some organizations from implementing encryption. "You're talking about managing pools of data and data on that tape for multiple decades," he said, and that task requires effective key management tools.

Sun's StorageTek Crypto Key Management Station, consisting of both hardware and software, is priced at \$45,000.

The IBM Encryption Key Manager for Java is included without charge as part of IBM's Java virtual machine and with IBM's Tivoli Storage Manager software. It is available for the z/OS, AIX, i5/OS, Linux and Linux for System Z operating systems. ■

## EMC, NetApp Unveil Data Classification Tools

BY SALMON FISHER

EMC Corp. last month brought out software designed to help users manage unstructured files and comply with government regulations such as the Health Insurance Portability and Accountability Act and the Sarbanes-Oxley Act.

The Windows-based Infoscape software discovers files using Microsoft Active Directory and Lightweight Directory Access Protocol directories, said George Symons, chief technology officer of information management at the Hopkinton, Mass.-based vendor.

The tool then collects metadata about the files and uses packaged or user-developed taxonomies to classify and manage the data, Symons said.

EMC President and CEO Joseph Tucci had revealed plans to build a tool that can classify unstructured data in a presentation to analysts on June 2. Dan Wells, vice president of operations at USA, Net Inc., a Colorado Springs-based pro-

vider of e-mail outsourcing services, said he's interested in evaluating the product's ability to discover information on file servers and other systems that aren't tied to EMC storage.

Symons said EMC expects to add support for semistructured files such as e-mail, as well as the ability to encrypt and move files into content management systems in future Infoscape versions.

EMC has also announced a service offering to help organizations implement Infoscape.

Earlier this month, Network Appliance Inc. in Sunnyvale, Calif., unveiled a data assessment service that also aims to help IT operations comply with various regulations.

The service came out about a month after the company released two software modules for its Information Server I200 hardware appliance, which searches for data and classifies it, said Chris Cummings, senior director of data protection and retention at NetApp.

NetApp licenses the software and the IS1200 appliance from Kazeon Systems Inc. One of the new software modules, NetApp Transparent Migration Manager, can be used to migrate data to different storage tiers based on user-defined policies. The other, NetApp

## EMC Infoscape

- Discovers data on shared networks and storage appliances
- Collects metadata about the stored files
- Classifies files using packaged or user-developed taxonomies
- Manages the files using policies

- Encryption capabilities
- The ability to move files into content management systems

Retention Manager can be used to burn data to tape once, read many disks, which are required by some U.S. Securities and Exchange Commission regulations.

Brian Rubineau, an analyst at Enterprise Strategy Group Inc. in Milford, Mass., said the EMC and NetApp offerings come at a time when users are seeking help classifying data and complying with regulations.

The big leap forward with the EMC Infoscape product is its ability to index files based on content rather than simply managing them by factors such as file name, file type or date of creation, said Mike Fisch, a Boise, Idaho-based analyst for The Clippert Group Inc. in Wellesley, Mass.

EMC Infoscape will be available this month and starts at \$24,000 for a 10TB configuration. The EMC Information Management Strategy Service is available now.

The NetApp IS1200 starts at \$30,000 per module; the company's data assessment service is available now. ■





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## EMC Infospace

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DON TENNANT

# Dribs, Drabs and Dysfunction

**S**HORTLY before Hewlett-Packard CEO Mark Hurd began reading a prepared statement at his press briefing on Sept. 22, a page suddenly disappeared from HP's Web site. The page was entitled "Hewlett-Packard Company Corporate Governance Guidelines." The second guideline, labeled "Director Leadership," stated: "The positions of chairman and CEO are held by different persons."

Of course, that governance guideline had been ignored shortly after news of the leak-probe scandal broke, when HP said Hurd would take over as chairman in January. Now it was important to expunge the page quickly, because it was at that press briefing that Hurd announced the resignation of Chairman Patricia Dunn and his immediate assumption of the post.

Whatever had compelled the HP board to adopt the separation-of-powers governance measure following the ouster of Carly Fiorina in February 2000 was indifferently discarded when the board found itself embroiled in a sleazy mooning scandal and a criminal investigation.

When I raised the issue with an HP spokesman, his e-mailed response was that "we are combining the roles of chairman and CEO and are adjusting our bylaws to reflect that. Since Mark was appointed CEO, both the company and the board have undergone substantial changes. Mark was a major proponent that the board would have a voice through its lead independent director, Richard Hackborn."

I had asked the spokesman why HP previously felt that the positions of chairman and CEO should not be held by the same person and why HP no longer felt that way. When I repeated my request for direct responses to those questions, the spokesman declined to comment on them.

I wasn't surprised, because those are very difficult questions for HP to answer. The reason why a growing number of U.S. companies are adopt-



ing the European model of having the chairman and CEO posts filled by different individuals has to do with responsible corporate governance through prudent checks and balances. For example, Intel's board of directors guidelines stipulate that the positions of chairman and CEO "should be held by separate persons as an aid in the board's oversight of management."

When it was first announced that Hurd would assume the chairmanship in January, an Associated Press report quoted Kirk O. Hanson, director of the Markula Center for Applied Ethics at Santa Clara University, who called that announcement "a big step back for the good corporate governance movement." I would add that the Sept. 22

proclamation of an immediate consolidation of power under Hurd reflected not only unsound judgment, but also an arrogant dismissal of legitimate and widespread concerns about Hurd's role in the scandal.

Hurd's extended reluctance to face his customers via the media took on a new light when he finally read his statement before the press. Total silence in a case like this invariably suggests a preference to keep certain information under wraps, and the information typically surfaces in dribs and drabs.

We now know from Hurd's statement that he approved the use of unsavory tactics — feeding false information to a reporter as a means of smoking out her source — as part of the leak investigation. We also know that Hurd was remiss in ensuring that the probe was being conducted properly when he failed to read a report that he admitted he "could have" and "should have" read.

HP should be bending over backward to demonstrate best practices for responsible corporate governance. Naming Hurd as chairman — especially before we have reason to believe that all the information on his role in the scandal has finally dripped out — suggests that the board is as dysfunctional as its harshest critics contend. ▀

*Don Tennant*



DAVID MOSCHELLA

# Has History Caught Up With Dell?

**T**HE RECENT burst of bad news from the once all-conquering Dell — disappointing earnings, executive departures, customer service problems, battery recalls, MP3 market withdrawal, SEC inquiries — calls to mind the huge cyclical swings that have always characterized the global PC business and the historical inability of even the strongest vendors to adjust. Each decade has had its own version of this pattern and its own winners and losers. Is history now repeating itself with Dell?

During the first half of the 1980s, IBM dominated the PC hardware business, especially in large companies, where it enjoyed a market share similar to what it had in mainframes — around 70%. In an industry without any real standards, IBM was the safe choice, and its products were usually good enough. But this lousy success soon sowed

the seeds of future problems. IBM became overconfident and unresponsive, fell behind in its price/performance ratio and staked its future on ill-associated ventures such as the PC Jr., PS/2 and OS/2.

These blunders opened the door for a new company, Compaq, which mastered the art of IBM PC compatibility and understood the value of portable (initially laptop) computers. Compaq also understood that it could be a leader in both price/performance and quality, which made it very popular with the then-crucial PC dealer community. During the second half of the 1980s and through the early 1990s, Compaq raced past IBM and became one of the fastest-growing companies in business history.



But at the heart of Compaq's success was a fundamental weakness—a dealer channel that didn't add enough value to justify substantial price mark-ups. This inefficiency was identified by, among others, a University of Texas student named Michael Dell, who in 1985 began selling PCs directly to consumers under the PCs Limited brand.

By cutting out the middleman and using inexpensive industry-standard components, the company (which was renamed Dell Computer Corp. in 1988 and more recently became Dell Inc.) grew steadily, but it wasn't until the emergence of the Web in the late-1990s that direct sales exploded, resulting in the \$60 billion giant that Dell is today. Compaq never effectively responded,

and in 2001, it was acquired by Hewlett-Packard Co.

Selling products directly over the Web was ideally suited to a time when the consumer wanted the optimal mix of configuration flexibility, price/performance and ease of ordering. But the enormous, and often unused, processing power and storage capacity of today's PCs have made these factors much less important. Increasingly, customer buying preferences are polarizing in ways that are making life more difficult for Dell.

Today, if all you want is a low-cost, standard PC, you can get a perfectly good one in about an hour down at the local superstore, whose thin margins are much harder for Dell to under-

cut. At the other end of the spectrum, many customers are now much more interested in fashion than function. As we have seen with cell phones and the Apple Macintosh, a significant portion of the market is willing to pay a premium for superior look, feel, color, shape, weight and style. Neither Dell's brand image nor its reliance on off-the-shelf components is well suited to this challenge, and thus the company is now scrambling to improve the design of its offerings. Given its vast size, this won't be easy.

When IBM's PC division and Compaq first started having market problems, few would have imagined that someday both would be acquired. Ironically, Lenovo (which bought IBM's PC

business in December 2004) and a rejuvenated HP are now trying to reclaim the PC market leadership once enjoyed by their previous incarnations. Of course, Dell is a very big and powerful company and will have many chances to get itself back on track.

But history says that in most IT markets, the first round of bad news is rarely the last and that comebacks, such as those eventually made by IBM, Apple and HP, often take years and result in radically different organizations. ■

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## READERS' LETTERS

### SOA Predictable

**T**HE BUSINESS benefits of SOA remain unclear. Having SOA was a Big Challenge for IT. News, Aug. 7. While building more modularity into applications is appealing, one wonders what benefits will ensue. SOA reminds me a bit of client/server technology.

Everyone jumped on the bandwagon believing that managing 180 servers was going to be easier and cheaper than managing one mainframe. Of course, few realized that client/server was more a marketing ploy by workstation companies.

**Walter Savitsky**  
Riverside and development,  
Cohere/Enterprise LLC,  
Ringwood, N.J., [wassaka@cohereenterprise.com](mailto:wassaka@cohereenterprise.com)

### Best Companies Don't Need H-1Bs

**I**N RECENTLY DISCUSSING with the two letter writers of Aug. 14 concerning the lack of qualified computer professionals ("In Defense of H-1Bs"), Having worked for many corporations, I know that they will work a job advertisement so no one can possibly be qualified. For instance, they ask for a year of experience with a specific release of Java, knowing that release has been out for only six months. Then they claim no one was qualified and go overseas, where they miraculously find "qualified" applicants (whose qualifications can't be verified but

will be paid half of current market value).

In Westchester County, N.Y., many companies refused to pay \$70,000 a year for Java developers. After the Internet bubble burst and these same Java developers could be had for \$60,000 a year, these companies went on a hiring spree. Of course, those companies that do development work based on hiring people only at certain rates and forgoing development when personnel costs are "too high" tend to sink to the bottom of the economic scale.

Companies at the top are willing to pay market value for developers to stay at the top. They have also discovered creative ways of maintaining a pool of highly qualified personnel by promoting from within, retaining those with different technology experiences and hiring out of college.

**Bruce Weiser**  
Adams, Kansas, N.Y.

### Why Big Pharma Lags in Integration

**C**OLUMNIST Charles Fennell has hit the nail on the head. IT sales and departmental and functional area IT solutions represent some progress away from archaic, paper-based information management but do not really point by themselves to an integrated future for pharmaceutical industry IT ("Can IT Save Big Pharma?" Technology, Aug. 7).

The capability for managing information in the pharmaceutical industry is at present not up to the level of completeness or sophistication that manufacturing, higher education or banking had as long as 20 years ago.

One thing lacking in the pharmaceutical industry—indeed, is all of human medical biology—is something that has actually enabled other industries to undertake integrated information management. I'm talking about standard models for representing the knowledge domain at the conceptual and third normal form relational logical levels.

As one clinical data scientist at a major pharmaceutical company told me, "I am tired of paying CDNs to re-invent the same database over and over again." I'm typing this on a BlackBerry in between applying coats of polyparathene on a Sunday while checking system statuses and e-mail.

**Alan Brandt**  
Senior information architecture technical specialist,  
Fair Lawn, N.J.

be no broad enterprise or industry information management.

**David P. Werns**  
Tucson, Ariz.

### No More Downtime

**I**MAGINE THE assumption that it is only CDs whose private time is infringed upon ("The Elusive Summer Getaway," Management, Aug. 7). Most of the IT people I know work more than 55 hours a week and can't get through a vacation without being paged at least twice.

In this era of shrinking IT departments and IT budgets and rampant outsourcing, the IT professional is finding that there is no longer anything that can be equated to downtime, private time or totally detached vacation time. In fact, I'm typing this on a BlackBerry in between applying coats of polyparathene on a Sunday while checking system statuses and e-mail.

**Alan Brandt**  
Senior information architecture technical specialist,  
Fair Lawn, N.J.

### Shrink Rap

**I**N HIS July 31 letter to the editor, Joseph Schelle wrote, "I am the only psychologist in IT that I know of." Actually, System Development Corp. was founded in the 1950s as a spinoff from Rand Corp. primarily as a mixture of psychologists, psychiatrists and IT specialists. We were originally a not-for-profit company

and later became a privately held, for-profit corporation before being bought out by Burroughs Corp. in the '70s and becoming a part of IT history the first real blending of human-factors technology and computer technology.

**Andrew H. Olson**  
Team International Group,  
Gainesville, Fla.

### Duplicate That Data

**T**HE ARTICLE "Firm Prompts Users to Hasten Hunt for Backup Alternatives" (News, July 31) indicated that users were hesitating to go to electronic archiving and back-up "over the wire." But over the wire to what? Instead of having paper records or tapes in an off-site building, you have tape- or disk-based systems in an off-site building. You need a more expensive system that gives you little or no more protection. For more protection, you need to back up over two wires to two buildings, for a part.

**Dale Lange**  
Systems administrator,  
Merritt Island, Fla.

**COMPUTERWORLD** welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to Jamie Eccles, letters editor, Computerworld, PO Box 9971, 1 Speen Street, Framingham, Mass. 01901. Fax: (508) 879-4843. E-mail: [letters@computerworld.com](mailto:letters@computerworld.com). Include an address and phone number for immediate verification.



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# TECHNOLOGY

10.02.06

## New Spin on Power

Flywheel technology may not be new, but it's the newest thing in three-phase UPS to hit the data center. **PAGE 28**



## FUTURE WATCH

### Deconstructing Complexity

In a Q&A, Eric Bonabeau, CEO of Icosys-tem, tells Computerworld about his work with companies on applying complexity science to business problems. **PAGE 30**

## SECURITY MANAGER'S JOURNAL

Measuring the Value of Metrics  
Mathias Thurman used to hate metrics, but now he's the one telling his staff to collect and report them. **PAGE 34**



Photo © P. J. Lippert

# NOW WE'RE TALKING

Speech technologies are moving far beyond call centers and into critical corporate applications such as search and security. **BY DREW ROBB**

**IN THIS ERA OF HIGH-TECH** medicine, computers can be found everywhere from the medication trolley to the operating room, but busy practitioners are often not in a position to use keyboards and mice. Sometimes the better option is to use a sophisticated interface that has evolved over millions of years — the human voice.

"A lot of environments in the hospital are hands-free, and some are eyes-free," says Dr. Redmond Burke, chief of cardiovascular surgery at Miami Children's Hospital. "When I

am looking at a baby's heart, I can't look up at the monitor or enter data into the patient database."

Dr. Burke and the department's head of IT, Jeffrey White, are working with IBM and Tigra Corp. in Coral Gables, Fla., to develop a

voice-based operating-room interface to the hospital's iRounds patient database from Teges.

At the start of a surgery, the computer reads out the patient's name, diagnosis and the procedure to be performed. The system then informs the surgical staff when it's time to perform actions such as giving the patient the next dose of anesthetic, reducing the chance of errors.

The doctor can also dictate information into the patient's medical record during surgery and link a verbal description with a photo taken during the procedure, rather than have to remember the details later. This voice data is synchronized with all the feeds coming from the patient monitoring and photographic equipment, providing a more exact record of what occurred during the operation.

"This system meshes perfectly with our goal of constantly looking for technology that would enhance our performance and reduce medical errors," says Dr. Burke. "I want all decisions to be based on accurate data."

Driven by a combination of advancing voice-recognition technology, adoption of standards such as VoiceXML, increased processing power and networks capable of supporting voice applications, organizations are finding new ways to use voice interfaces to improve customer service, enhance security and boost employee productivity.

In addition, voice mails and teleconferencing will soon become just one more type of data to be stored, replayed and searched as easily as a text document. Not yet up to the level of the starship *Enterprise's* onboard system (though Dr. Burke does activate his interface by saying "computer"), the technology is rapidly approaching that level of pervasiveness and integration with other systems.

Although it's only starting to find widespread adoption, the concept of machine-based speech recognition is far from new.

"Voice technology continues to be an evolution," says Richard Cox, vice president of IP and voice services research at AT&T Laboratories. "Speech recognition is never perfect, but people are learning what they can do with it and



Although it's only starting to find widespread adoption, the concept of machine-based speech recognition is far from new.

how to work around its shortcomings."

Alexander Graham Bell first proposed speech recognition back in the 1870s as a way to help the hard of hearing, and in 1952, Bell Laboratories developed a system that recognized the numbers 0-9 spoken over the phone. Later in that decade, researchers at MIT developed a system that recognized vowel sounds.

But while the research continued to advance, a lack of processing power kept voice technology from moving out of the lab and into commercial use,

except for simple applications such as call center voice-response systems.

"People have been interested in the ability to search audio by content since the 1970s, but the processing power was not enough to make it viable on a very large scale," says Ri Pierce-Grove, an analyst at Datamonitor PLC in New York.

As more processing power becomes available, speech recognition is gaining wider adoption in certain fields. According to Daniel Hovig, Datamonitor's senior voice business analyst, the worldwide market for speech self-service applications will hit \$1.5 billion this year and is growing more than 20% annually. A primary driver for this is, of course, money: It costs \$5 for a U.S.-based call center employee to take a call, but only \$0.50 to serve the customer with a machine.

And those improvements in processing power also mean that speech technology is finally starting to provide more than just a replacement for a touch-tone dial pad. Systems can now use natural language processing—the ability to recognize the meaning of

words as they are used in normal conversation, rather than just a limited set of commands or keywords. Furthering this growth has been the switch from proprietary software to use of open standards such as VoiceXML.

#### **VoiceXML is a Driver**

"The development of the VoiceXML markup language to create open standard voice interfaces has been driving the market for speech technologies for the past several years, since speech applications programmed with VoiceXML can run on multiple vendor platforms," says Rashmi Sundararajan, an analyst at Frost & Sullivan Ltd. in Palo Alto, Calif.

Another advantage is that since VoiceXML is similar to HTML, it opens up the creation of voice-based applications to Web developers, rather than requiring highly specialized knowledge. Further clearing the path are standard interfaces such as IBM's WebSphere Everywhere Multimodal Environment, that give users the option of using voice, keyboard or mouse to interact with applications. Ease of use and interoperability are leading to an explosion in new voice applications, which will only increase with the creation of better tools for developers.

"Speech is evolving much as the Web evolved," says Brian L. Garr, IBM's program director for enterprise speech solutions. "The only reason the Web is successful in that application software became easier. Voice authoring tools have to evolve for adoption rates to pick up."

In addition to being able to understand the meanings of the words spoken, there has also been growth in applications that identify who is speaking on a phone call or recording. This technology could be helpful in creating transcripts of conference calls or court proceedings; it could also be used for security applications.

"More and more businesses are interested in speaker recognition for biometric security," says Cox. "If done correctly, you can get good reliability out of it, and it will give you an extra sense of security."

Brokerage services firm Pershing LLC, a unit of The Bank of New York Co., has been using voice software from Nuance Communications Inc. in Burlington, Mass., since 1999 for a product called TelExchange, which lets customers check their balances, review their transaction histories and conduct trades. Two years ago, the New York-based brokerage added Nuance's biometric voice-recognition and

## **HAL Will Be Here A Little Later**

**IBM'S** *WebSphere Everywhere* multimodal, speech technology is becoming a mainstream, but even in the making of our content, its use is evolving.

"Automated WebSphere Everywhere can reduce the conversations in real time and get suggested answers up on the agent's screen," says Mike Lynch, founder and CEO of Automate Inc., a consulting firm that specializes in call center applications.

IBM's *WebSphere Everywhere* (WEE), for example, is helping researchers learn how to build automated decision trees by using a user's voice. The software can also detect when a customer is starting to get angry and call in a supervisor to take over.

Another application you can expect to see in a few years is bidirectional translation of conversations. The *WebSphere Everywhere* (WEE) can, for example, be used to help researchers learn how to build automated decision trees by using a user's voice. The software can also detect when a customer is starting to get angry and call in a supervisor to take over.

The goal of this program is to build a *WebSphere Everywhere* that can take speech or text in any

language and convert it into English," says Steve Dilly, vice president of speech and language at IBM WebSphere, a WEE component.

IBM is working on several projects, including dialogue management for enabling more complex transactions.

"We can say, 'What is the price of IBM stock?' and then the next sentence is, 'I want to buy 100 shares,'" says Brian L. Garr, IBM's program director for enterprise speech solutions. "The next dialogue managed on the system knows the second sentence is talking about IBM stock."

IBM is also working on emotion recognition and on using context to read lips, which adds to the accuracy of speech recognition, especially in noisy environments.

While the technology continues to improve, we are still a ways away from *Isaac Asimov's* vision of HAL, the computer in the 1968 *2001: A Space Odyssey*.

As Dr. Richard Burke at Mount Children's Hospital explains, voice recognition is a useful addition to other technology, but it's not a replacement. In his operating room, Burke has 10 screens showing things such as the electrocardiogram, changes of drugs and oxygen saturation. "I can't even sit my eyes around the room and instantly check all that data," Burke says. "But with this voice interface, you have to be patient and wait for the computer to respond."

— STEVE WILK



This system meshes perfectly with our goal of constantly looking for technology that would enhance our performance and reduce medical errors.

password-reset products to its existing system so that users can reset their own LAN passwords. Pershing has 4,300 employees, and use of these tools reduced the number of calls the help desk handles per month by 1,500.

"Password resets are a nuisance, not a value-added, task for our service center," says Pershing Director Peter Antonucci. "We felt we could easily take care of it with this technology."

#### Growing Applications

Speech-recognition applications fall into three broad categories: communications, search and interaction.

In the communications arena, cellular carriers have offered voice commands for hands-free operation for several years. But this technology is now making its way into enterprise applications. Vocera Communications Inc. in Cupertino, Calif., uses voice over IP and Wi-Fi-enabled badges to enable mobile workers to communicate lazily. A user touches a button on the badge to initiate a conversation. He then gives verbal instructions to be connected to other badge wearers,

place outbound calls, check messages or send e-mails. The user can place a call based on the recipient's name, job title or other identification, such as "the nurse covering Bed 203." The application is location-sensitive, so the caller can use it to, for example, locate another employee or ask for a connection to the nearest security guard.

The system is primarily used in hospitals, hotels, retail establishments and factories. It currently scales up to 1,800 badges, but Version 4.0, which ships this fall, will substantially raise that limit, according to Brent Lang, Vocera's vice president of marketing.

Voice search can be done by either keyword or by figuring out the meaning in context. Natural Speech Communications Ltd. in Rishon LeZion, Israel, makes plug-in boards that can monitor up to 130 phone calls simultaneously, spot keywords and alert operators when specific words or phrases are spoken. Security agencies can use these boards for wiretapping, and private-sector organizations use them to mine data from phone calls.

But voice search also has broader

public applications. For example, the Podzinger.com site of Cambridge, Mass.-based BBN Technologies searches podcasts. Similarly, the Blinks.tv site of privately held Blinks lets visitors search more than 4 million videos available on the Internet and provides the back-end video search function for sites such as Lycos.com. Blinks has about 600 servers at its data centers in London and San Francisco that crawl the Web for video content and then convert the voices on those videos into searchable speech.

"It could be a Texan talking about country music or a well-spoken Brit speaking about Tony Blair's government," says Suranga Chandratillake, Blinks co-founder and chief technology officer. "It has to understand what was said, regardless of the accent, so you need as many contextual clues as possible to determine the meaning."

Blinks uses language analysis and search technology from Autonomy Inc. in San Francisco. Blinks has production systems for English and Chinese videos, and betas in French, German and Spanish. Blinks is sticking with Web search, but the technology can be applied to internal corporate communications, such as teleconferences.

Finally, voice adds an additional means of interacting with existing applications that would otherwise require a keyboard, mouse or touch screen. Last year, for example, London-based medical device manufacturer Smith & Nephew PLC added a voice interface for its digital operating-room software. Through a wireless headset, doctors can control the heating and air conditioning, the lighting, and tools, cameras and other devices through a

standard interface.

Thermal Services Inc., a heating and air conditioning maintenance company in Omaha, is using a custom field service application from IBM and Openstream Inc. in Somerset, N.J. Thermal Services field technicians have tablet PCs with built-in microphones. They have the option of using a stylus or voice commands, whichever they feel more comfortable with. The tablets have a Wi-Fi connection to the trucks and an EV-DO wireless connection to headquarters.

The technicians use the tablets to report when they leave for and arrive at a location, check inventory, order parts and search for a customer's past history. The tablets also tie into the back-end inventory management, pricing, billing and payroll systems.

When a technician issues the command to print an invoice, a message is sent to the dispatcher, who then confirms the next service appointment and notifies the technician. The system, which went live earlier this year, has allowed technicians to conduct one additional service call per day. It has also eliminated pricing errors and lightened the load on the accounting staff.

Thermal Services' president, Wade Mayfield, says that one of the best aspects of the system is that it helps train new employees, which will make it easier to expand the company.

"The voice software walks the new person through the steps of the invoice," he explains. "It is a great training tool."

Robb is a Computerworld contributing writer in Los Angeles. You can reach him at [drewrobb@abcglobal.net](mailto:drewrobb@abcglobal.net).

## JORGE MADE LINUX FASTER



# New Spin on Power



The power plant is a flywheel (right) which weighs about 25 lb. and is about a foot in diameter and 7 in. high. The entire cabinet is much larger. It's 29 in. wide by 33 in. deep by 71 in. high, and it weighs 1,300 lb.



Some data centers are adopting UPSs that use flywheels instead of batteries as the power source. Here's why:

## AT A GLANCE Flywheel UPSs

**PRO** ■ Require less floor space than battery systems.

■ No batteries to replace.

■ Power source lasts 20 years vs. two to four years for batteries.

■ Power source does not degrade over time, whereas batteries do.

**CON** ■ Units can cost 50% more to install than a compatible battery-backed UPS.

■ Power is delivered for a much shorter duration—up to 25 seconds vs. 25 to 30 minutes for battery systems.

■ Weight can range from 1,300 lb. to 2 tons or more, depending on capacity.

**BEST FIT** Large data centers with higher power requirements that currently use battery UPSs to bridge the time gap between when an outage occurs and when backup generators can come online.

IBM Freescale Semiconductor Inc. installed a new UPS system in its Austin data center, but its weren't included

—and they weren't needed. The semiconductor manufacturer uses an uninterruptible power supply (UPS) powered by a flywheel. A single 300-kilowatt-amp unit, about the size of a refrigerator, delivers up to 240 kilowatts of power.

The three-phase power unit keeps 60 racks of high-density server blades and networking, storage and other equipment running for about 15 seconds, and that's plenty of time for backup generators to come online if the interruption lasts that long, says Kevin Stuckly, senior staff engineer in Freescale's facilities group.

The ClearSource flywheel from Austin-based Active Power Inc. costs about 50% more to install than a similarly sized battery UPS, but it runs more efficiently (about 92% of the power generated is available to the UPS vs. 92% to 93% for a battery UPS) and takes up about one-third less floor space, says Scott Buyer, senior staff engineer at Freescale. And with no batteries to replace, it requires substantially less maintenance, and uptime is higher. "In 10 years, we will see a 40% savings," Buyer says.

But the company had another reason to replace its traditional UPSs. "We

wanted another option because of [battery] maintenance and disposal costs," Stuckly says.

Flywheel technology has been around for decades, says Farah Saeed, an analyst at Frost & Sullivan Ltd. in San Antonio. "Originally, they were developed as a substitute for batteries in hybrid vehicles," she says. In the past few years, flywheels have started to make inroads into data centers.

Flywheel UPSs represented just 6% of the \$989 million market for three-phase data center UPSs in 2005, Saeed says, but acceptance is growing as data center power demands increase. Pentadyne Power Corp. reports that its orders are up eight-fold over last year. Market leader Active Power claims to have 1,000 customers.

A flywheel UPS stores energy in a rotor that spins up when power is applied and gradually releases it as the unit spins down when power is removed. Most units deliver power for about 15 to 20 seconds—much less than the 25 to 30 minutes available from a battery UPS but enough to bridge the power gap until generators can kick in. That's also enough to handle most interruptions, 98.5% of which last less than two seconds, says Mark McGough, president and CEO of Chatsworth, Calif.-based Pentadyne.

The mass and speed of the flywheel determine the amount and duration of



# New Spin on Power



## EMERGING TECHNOLOGIES

Some data centers are adopting UPSs that use flywheels instead of batteries as the power source. Here's why. **BY ROBERT L. MITCHELL**

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LEADERSHIP  
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SOFTWARE

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Real World  
Business Intelligence

**Real  
World  
Lessons  
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**H**yperion is proud to sponsor Computerworld's 2006 "Best Practices in Business Intelligence" Awards Program and this special supplement profiling the honorees.

This year's innovators are the best of the best when it comes to substantiating the benefits of business intelligence (BI) in their organizations. Honorees are business-focused technology leaders who are leveraging the power of BI to fundamentally impact their organizations by providing insight that can lead to performance improvements. We hope that these success stories will inspire others to lead their enterprises in adopting BI and cascading its use to many more people as part of a strategic information management strategy.

As we have seen with past Best Practices awards, the 2006 honorees represent a variety of industries. Whether focused on planning and designing a BI



infrastructure, honing plan components such as information retrieval or data visualization, or creating competency centers, each featured case study offers proof that a strategic vision for BI has the power to unlock the value of business information in organizations.

At Hyperion, we believe the current state of poor visibility and limited access to critical and accurate information is causing an uprising—a Business Performance Management revolution that strives for Information Democracy, or a state in which everyone in an organization has an equal right to actionable insight. A strategic BI vision is putting these honorees on the path to Information Democracy.

We encourage you to consider the advantages of an enterprise BI strategy that can help you meet the business need for insight in your organization. We believe that, like the attendees of Computerworld's BI Perspectives conference, you will conclude that there is a passion for best practices and tremendous pride associated with being recognized for successful IT implementations.

Congratulations to the honorees and those who received honorable mentions in this year's program. Thank you to all the IT professionals, agencies and others who participated in the program by submitting detailed case studies for evaluation. We also acknowledge and extend special thanks to the industry leaders, experts and practitioners who served as judges, and who had the tough task of selecting the honorees from an abundance of strong entries.

John Kopcke  
Chief Technology Officer  
Hyperion

## Meet our 2006 Honorees

### ■ CATEGORY 1

**Creating a Strategic Vision and Using BI for ROI through IT Leadership**

PAGES 4-5

COOPER  
COMPANIES, INC.

REINSLER POLK  
TECHNICAL INSTITUTE

### ■ CATEGORY 2

**Planning, Designing and Building the BI Infrastructure**

PAGES 6-7

R.L. POLK & CO.

CISCO SYSTEMS

### ■ CATEGORY 3

**Information Retrieval and Reporting by Leveraging Off-the-Shelf Enterprise Software**

PAGES 10-11

CHICAGO MERCANTILE  
EXCHANGE

READER'S DIGEST  
ASSOCIATION

### ■ CATEGORY 4

**Data Visualization, Prediction and Presentation by Leveraging Customized Solutions**

PAGES 12-13

EMERGENCY MEDICAL  
ASSOCIATES

BNP RAILWAY

### ■ CATEGORY 5

**Use of Competency Centers to Champion BI Technologies to Enterprise-Wide ROI**

PAGES 14-15

HYTHYMPHAIN  
HEALTHCARE

IBM CORPORATION

COOPER COMMUNITIES, INC.

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# In the Palms of Their Hands

OVER THE PAST FIVE YEARS, Cooper Communities has been developing a concept called "Ubiquitous Business Intelligence (UBI)." Today's increasingly mobile executives and senior managers need access to the latest and best information wherever they happen to be in order to enable more informed, timely decisions. Many Cooper Communities executives travel extensively. Consequently, the company has established a center of excellence for UBI within its Information Systems Group.

Here is a quick summary of the concept. UBI is about delivering key business information and metrics to executives and managers immediately, whenever they are. The underlying information should be extracted live, directly out of enterprise management systems. Summary information should be presented graphically, with drill-down capability to whatever level of detail is needed.

Information should be delivered to a hand-held device that supports graphical presentation and drill-down capabilities. The version used by Cooper Communities very nearly delivers an "office-on-the-

handheld" experience by providing full support for UBI delivery. The package is powerful, whether it is delivering information instantly for real-time decision making, or refreshing the latest sale, order or key business metric.

This makes UBI a very tactical concept supporting a wide variety of decisions. At the very least, UBI supports a "management by exception" model, but it can extend much farther than that. One example is a quick review of current data right before a meeting with a customer (What was their most recent order? Are they delinquent in payments?). Another is real-time "raincheck" directly from the CEO or Vice President of Sales for salespeople who just made a key sale 15 minutes ago. A third

"Executives have already bought into the concept of business intelligence. UBI represents the next generation—real-time delivery of key business metrics without having to be tethered to a desk or bulky laptop."

JIM CRAIG, COO, INFORMATION SYSTEMS, COOPER COMMUNITIES, INC.

example is a projection of where the next opportunities are coming from based on up-to-the-second trend data generated on the spot. As good as they are, these examples barely scrape the surface of UBI's potential.

The UBI concept dates back to 2001, when a company executive saw untapped potential in an intelligent telephone. Cooper Communities built its first UBI prototype early the following year. Unfortunately, the technology was not mature, so the company focused on being ready to deliver when the technology was ready. That strategy included developer training, architecture and conceptualization.

Today, executives in two of four strategic business units are using UBI views that have been built over the last couple of months. None of these executives are particularly IT-savvy, but all are excited about UBI in combination with—and in some cases instead of—more traditional approaches. Recently, Cooper Communities has deployed additional UBI platforms to its company president and executives in other strategic business units. ■

- Real-time business metrics
- Tactical competitive advantages
- Information ubiquity
- Mobile executives

Today, executives in

that have been built over the last couple of months. None of these executives are particularly IT-savvy, but



COOPER COMMUNITIES IS GROUP

From left: Pat Sampson, Jim Craig, Alex Barba, Standing left to right: Robert Green, David Green, Steve Davis, Brian Vernal, Duane Ragland, David Connors, Christine Holly and Leigh Young.

This category recognizes those organizations that have created a strategic vision for success, as well as strategies for implementing the BI vision, risk management and cost/benefit justification. These solutions show how the successful vision in managing information assets was a function of infrastructure process, people and culture all working together, driven by IT leadership.

2004 HONOREE

## RENSSELAER POLYTECHNIC INSTITUTE

TROY, NY • WWW.RPI.EDU



# Flexible Dashboards, Dynamic Reports

RENSSELAER POLYTECHNIC INSTITUTE employees need information to chronicle the past, describe current activities, and anticipate the future. In 1999 Rensselaer leadership was debating information accuracy while faculty and administration were relying on month-old financial statements for decision-making. Cross-functional barriers were high and information sharing was low.

Today, 650 users from all levels and departments monitor performance using dashboard technology and ad-hoc analytics against a university-wide data warehouse. Given varying user needs and skill levels, Rensselaer deployed flexible dashboards and dynamic reports allowing every user to get exactly the information they need. Financial, student and budget information is readily available. With simple selections, users drill down to detail data from summary overviews.

IT leadership recognized early that to gain a true return on investment, Rensselaer culture, processes, and people needed to change. Cross-functional ownership over the BI program was established and the newly created Data Warehouse organization within IT became accountable for BI success.

A campus-wide communication campaign led by the CIO demonstrated the new analytical capabilities and how they could be used. IT also worked with HR to change many of the financial and business manager job descriptions. Finally, employees were given access to the warehouse only after completing training on BI technology, data and policies.

Newly established Data Policies ensured information confidentiality and privacy while minimizing organizational boundaries and promoting information access. A unique security system was implemented allowing access at aggregate levels, while restricting detailed

ing on BI technology, data and policies. Newly established Data Policies ensured information confidentiality and privacy while minimizing organizational boundaries and promoting information access. A unique security system was implemented allowing access at aggregate levels, while restricting detailed

- Increased effectiveness
- Financial accountability
- Unique security system
- Better information quality

and it has given Rensselaer a competitive advantage by enabling the school to make



"BI penetration into Rensselaer culture has resulted in more accurate, data-driven decisions that provide competitive advantages."

ORA PINK, DATA WAREHOUSE MANAGER,  
RENSSELAER POLYTECHNIC INSTITUTE

level access, thus ensuring regulatory compliance.

An estimated \$1.2 million is annually delivered to the bottom line with this solution, and it has given Rensselaer a competitive advantage by enabling the school to make accurate, data-driven decisions based on a single source of information.

As a result of its BI initiative, Rensselaer is enjoying several key benefits. They include optimizing student financial aid by using enrollment data, enhancing admissions effectiveness by increasing the percentage of students who complete their education, and more accurately identifying students who are most likely to attend. Additional benefits include more accurate, fact-based predictions for financial aid, research funds, and cost-sharing commitments, and faster, less laborious information delivery.

The success of Rensselaer's solution is attributable to effective IT leadership. This is a stellar example of what can be accomplished with a solid solution design, flexible tools and an inclusive implementation methodology. ▲

Best Practice  
Business  
2006

## Planning, Designing and Building the BI Infrastructure

2006 HONOREE

**R.L. POLK & CO.**  
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**Polk**  
realtimeintelligence

# On-time and Automatic

R.L. POLK HAS SERVED as the world's leading compiler of automotive product and consumer data since 1922. Never wanting to rest on its laurels, Polk has continuously improved its data management methods. Given today's environment, in which privacy compliance is introducing even tighter restrictions on how data can be used—and adding to the complexity of utilizing data—the company's recent IT re-engineering project enabled Polk to move beyond continuous improvement to develop an innovative approach that would revolutionize its core foundational data warehouse.

Polk maintains a master database of over 2.5 billion transactions representing vehicle ownership history for the last 10 years. This history includes over 900 million unique vehicles and 250 million U.S. households. This data also serves more than 50 analytical and operational applications. Timely, accurate, and consistently high-quality data are essential to the company's market-leading applications. The master database is constantly updated on a 24/7 basis through feeds

"Our system delivers a single source of truth, ensuring richer, timelier and higher quality data feeds to optimize investments made by Polk's customers and automotive market intelligence systems."

KEVIN MACCONE, CHIEF INFORMATION  
OFFICER, R.L. POLK & CO.



**R.L. POLK'S RLP TECHNOLOGIES**  
TEAM Standing: Joe Fournier, Norman Marks, Karamanul Nohad, Louis Desney, Chris Bencosky, Chris Sager, Dennis Deater, Pei Zheng, Liu Wagner, Tereza Phillips, Rob Draper, Chad Joss, Henry Bonati, Scott Thibodeau, William Frost, Mike Reed, Pat Seemann, Kim Muel, Middle Celeste Catala, Lawrence Rana, Kathleen Morikawa, Michelle Treasle, Renee Conner, Indra Harshbarger, Joe Luber, Frank Kavan, William Gordon, Watson, Sergey Melchioris, Mike Davis

from over 240 different external sources. Polk receives this data in varying timeframes and formats, and processes approximately 600 million records per year.

The company wanted to increase the timeliness and completeness of data delivered to customers. In an effort to identify and resolve errors prior to downstream

distribution, it also wanted to automate the process by which data quality is managed. Polk further sought to add flexibility that would bring new data, services and BI applications to customers quickly and easily.

The solution is fully automated, and processes "data in motion" similarly to the way a factory employs the principles of Lean Manufacturing to handle raw materials. As soon as inbound data arrives, automated collection and real-time processing minimizes the time required for it to reach its key BI solutions.

The comprehensive, integrated software solution used in this project provides one common user interface and data processing engine. This software allows Polk to capture, enhance, compile and distribute quality data that is used to drive more timely and objective decision making. A single integrated portal provides Polk data analysts with one access point to manage and perform all data processing tasks and to handle processing exceptions.

The outcome is a "single source of truth," ready to be called upon for data distribution based on the needs of the business. Polk now optimizes investments made by its customers in their BI systems by ensuring richer, timelier and higher quality data feeds. ■

- Consolidated view of information assets
- Continued competitive advantage
- Less expensive IT infrastructure
- 50% increased efficiency delivering quality data

The software solution used in this project provides one common user interface and data processing engine. This software

This imagery illustrates deployers who have created an infrastructure that allows their knowledge workers to easily access data of all types. The infrastructure must allow access to legacy systems, factoring in security, disaster recovery, and powerful search capabilities. Subscribers should demonstrate the design and implementation of the infrastructure, the deployment of security requirements, and the rollout of enterprise portals, content management solutions and knowledge management systems.

ENTERPRISE INFRASTRUCTURE

## CISCO SYSTEMS, INC.

SAN JOSE, CA • WWW.CISCO.COM

Cisco Systems

# One infrastructure, one view

CISCO SYSTEMS USES a standard BI technology for dashboard applications. Dashboards provide a structure for grouping information, enabling drill-down capabilities and displaying information in graphical and textual formats. Users interact with a Web interface that is intuitive and provides easy access to relevant information. Data is sourced from Functional Data Marts, operational systems, and an Enterprise Data Warehouse.

Initially, an analytics package was deployed on servers set up and maintained by each functional area. As dashboard solutions began to expand throughout the enterprise, it quickly became apparent that this approach would not scale in a cost-effective manner. The negative impact of Cisco having multiple environments included high costs associated with redundant hardware and resources, as well as little to no leverage of best practices and experience between groups. That negative impact also included extended timelines required to upgrade software across multiple instances, and difficulty in partnering with vendors on product enhancements such as security and performance.

To meet the growing demand for dashboards, Cisco's Enterprise Architecture group partnered with Manufacturing/Engineering IT and Infrastructure teams to architect and implement an infrastructure environment capable of supporting all dashboard solutions within Cisco. A standard infrastructure is in place for development, test and production, using Sun application servers and HP Web servers. Additional environments are available to teams for proof-of-concept projects.

While the infrastructure environment

was being architected, several issues surfaced that required close collaboration with vendors. The first was improved security within the product to meet Cisco security requirements. The second was the capability to host multiple instances of analytics on a shared server. The third was the ability to streamline the movement of data between multiple data marts.

Cisco's Information Security group worked with its vendor to ensure that product changes were made to meet Cisco's requirements, including enabling SSL between all components. The impact of these enhancements was significant in that it allowed Cisco to support both internal and external access to analytics on one set of servers. Hosting multiple instances of analytics was a critical requirement for optimizing utilization of hardware, which in turn is a critical requirement for supporting

"Cisco IT uses its BI application solutions to provide insight to business decision makers across the enterprise."

SHAWN CHANG,  
IT DIRECTOR, CISCO  
SYSTEMS

multiple projects at the enterprise level.

Cisco also worked with a third-party vendor to pilot an innovative data integration solution that became a single touch point for quick and accurate access to the data required from multiple BI tools.

Implementing an infrastructure environment architected for the enterprise has resulted in a number of benefits. For example, overall support and maintenance costs are lower, and duplication of effort and redundant hardware are eliminated. Also eliminated are the inconsistencies created by a large number of data marts.

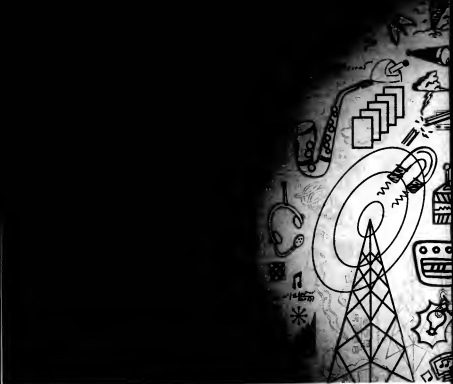
The ability of project teams to focus on delivering business solutions and not infrastructure is a definite plus, as is the fact that a central team at the enterprise level provides shared services to all groups hosted in the enterprise environment.

Cisco's enterprise analytics infrastructure environment provides a stable platform that scales according to demand, enabling users to focus on business solutions as opposed to system performance and availability. ■

- Scalable IT infrastructure
- Optimized dashboards
- Rapid data access
- Cost efficiency

The ability of project teams to

as is the fact that  
a central team at the enterprise  
level



Leaders Wanted/CIO Challenge Series

## Challenge #1:

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Best Solution in  
Business Intelligence  
2006

## Information Retrieval and Reporting by Leveraging Off-the-Shelf Enterprise Software

2006 HONOREE

### CHICAGO MERCANTILE EXCHANGE

**cme**  
Chicago Mercantile Exchange



THE INFOSOURCE TEAM (from left): Tom Zim, Andy Barnes (Project Lead), John Paul

THE CHICAGO MERCANTILE EXCHANGE is the largest and most diverse financial exchange in the world. In 2005, over one billion contracts were traded at CME, with over 700 million of those executed through the CME Globex electronic trading platform. This was the first time in the company's 108-year history that the exchange surpassed one billion contracts traded in a single year. To look at this another very impressive way, the value of trading done at CME in the first two weeks of 2005 exceeded the value of trading done during the entire year at the New York Stock Exchange.

As CME's business has performed impeccably, its data management task has grown exponentially. Online storage from all applications grew from 5TB to 250TB in the last five years. In addition to increasing dramatically, data was growing in different directions and diverse places. As a result, critical information needed to make business decisions was spread among many databases and applications.

CME traditionally relied on stand-alone development groups for its analysis, reporting and information development needs. Most solutions were custom built with very limited functionality, meaning it was expensive, inefficient and often impossible to reconcile information between silos. Pre-

vious attempts at a more comprehensive reporting and analysis approach, i.e. development of an enterprise data warehouse, were all unsuccessful.

In February 2006 a new team proposed the development of an enterprise data warehouse and business performance management system. This team engaged "enterprise data liaisons" to represent the information needs of each department and contribute to the requirements-gathering process. Those requirements, along with informed research and subsequent discus-

- Enterprise-wide impact
- Improved efficiency
- Enhanced business analysis
- Better, centralized data

— from the  
CEO down to line managers.  
The system enables an area to

"The CME InfoSource System provides a single, secure and trusted application for business people to easily develop and share sophisticated reports and analysis."

ANDY BARNES, ASSOCIATE DIRECTOR,  
DATA WAREHOUSE & REGULATORY SYSTEMS, CHICAGO MERCANTILE EXCHANGE

sions with vendors, helped determine the capabilities and strengths of various off-the-shelf options.

The resulting CME "InfoSource" system seamlessly integrates several off-the-shelf tools into one application. Its deployment plan helped deliver critical requirements quickly and satisfied long-term business needs. InfoSource is a Web-based system based on database, data warehouse, and BI technologies. A small number of custom HTML pages integrate these tools into one seamless application. Specific capabilities include financial dimensional analysis, report distribution, ad-hoc queries and customized dashboards.

After implementation in 2006, InfoSource fundamentally changed the way CME leaders access information—from the CEO down to line managers. InfoSource enables an area to customize its own performance metrics and measure against those goals with real-time data from one day to the next. As a result, CME has better data, as it is all accessed in one application rather than in bits and pieces. It can make more educated business decisions with this centralized solution, and it is better able to identify trends as the business grows. ▲



This category recognizes those organizations that have strategically deployed enterprise software in a way that has fundamentally impacted the way they access information. The solution should include how new analytic and statistical reports, for both executives and line managers, have assisted in making strategic and tactical decisions. Submissions may also include reports covering obvious deficiencies and opportunities in the operational processes, customer demographics and market conditions.

2004 HONOREE

## READER'S DIGEST ASSOCIATION

PLEASANTVILLE, NY • WWW.RDA.COM

# Not just data—information

PRIOR TO IMPLEMENTING a BI solution, the direct marketing operations of Reader's Digest Association (RDA) were relying on an overly-expensive 35-year-old legacy database and a variety of equally costly homegrown software tools for all customer and prospect interactions.

In addition to its high cost, this environment limited functionality because it was unable to easily support the new marketing channels and initiatives the company wanted to implement. RDA wanted to rectify this situation by streamlining the creation of over 600 annual campaigns. It also wanted to reduce costs without negatively impacting results associated with its lead acquisition and follow-up activities, cross-selling programs, and list-mental efforts.

In the summer of 2002, the Vice President of Customer Technology proposed a BI solution to cut process operating costs by 35 percent, while improving the flexibility, reliability and ease of use. The solution was approved in January 2003, and the MSR—Marketing Systems Replacement—project began. RDA selected a variety of tools and partners for the project,

including a relational database to store all customer and prospect information, and data analysis tools to optimize the use of that data.

The challenges were daunting, and included defining a structure to make the company's 61 million customer database perform adequately for both data updating and selection. Challenges also included developing a way to feed the statisticians' need for "how a customer looked in the past" for regression analysis. In addition, the system would be required to easily output customer personalization information from the 2TB customer database.

It took 15 months for RDA to reach the point where it fully believed that its busi-

- Marketing analysis and selection operating costs cut 35%
- Soaring morale
- Better database performance
- Flexibility, reliability, ease of use

The financial payoffs on the project were real. For example,

and select the right individual in a household to receive the promotion.

"We had a great team that helped us significantly reduce operating costs while creating a solution that was easier to maintain and use."

NOB HILLIARD, VICE PRESIDENT,  
CUSTOMER TECHNOLOGIES,  
READER'S DIGEST ASSOCIATION

ness would not be negatively impacted by the cutover. In April 2006, it performed its first selection. The following month, it shut off its legacy marketing systems.

In addition to reducing operating costs of marketing analysis and selection by 35%, RDA also slashed time to market—while enabling more flexibility—for scheduling, creating and executing the analysis and selection aspects of a campaign. Another key benefit was the improved ability to access and report on data, without IT assistance, from multiple data sources, while providing a complete customer view. The financial payoffs on the project were real. For example, one campaign had a 20% increase due to MSR's ability to match individuals and households and select the right individual in a household to receive the promotion.

Soft-dollar savings were also important because the morale of both the IT and database marketing services teams is way up. They were successful in implementing one of the hardest projects that they will ever participate in, as the replacement of RDA's legendary legacy system was tried numerous times without success. In addition, this project was cut over without any negative impact to the business. ▲



THE READER'S DIGEST TEAM, from left: Tina Pedack, Josh Lanning, Rob Hiltner, Jon Conway, and Jerome Nelson

2006 HONOREE

EMERGENCY MEDICAL ASSOCIATES

LIVINGSTON, NJ • WWW.EMA-ED.COM

E

## BI for Bio-surveillance

EMA IS A GROUP of over 220 board-certified physicians that staff and manage 17 emergency rooms. In 2000, EMA embraced BI solutions to improve emergency department (ED) operations in hospitals where EMA is responsible for physician staffing. Subsequently EMA expanded its use of BI technology to include the management of emergency room operational, financial, and customer satisfaction data. The system is known as the Emergency Medicine Analysis and Reporting System (eMARS).

EMA built distinct dashboards for its hospital EDs to understand diagnosis trends and emergency room effectiveness. These dashboards track everything from patient turnaround times to patients who left without being seen, to the number of patients holding in the emergency department.

Having moved to a Web-based user access system in 2004, each site-specific dashboard draws information from the organization's data warehouse, which in turn pulls data from multiple data sources, such as patient management and tracking, clinical documentation, physician work hours, physician satisfaction, and payroll. The system currently tracks data from more than 700,000 ED patient encounters annually.

After the September 11, 2001 terrorist attacks in New York City and Washington D.C., the medical community went on high alert preparing for biological attacks. With the threat of new diseases such as SARS and West Nile virus increasing, EMA realized that the solution it was building to improve operational efficiency could also be used to create a bio-surveillance

system that would search for patterns in patient data to track disease outbreaks.

The custom dashboards used for bio-surveillance cross-reference patient complaints with a set of disease-grouping algorithms developed by the New York City Department of Health. Based on key words used by patients in articulating their symptoms to ED nurses, patients are placed into these disease groupings (also known as syndromic groupings) by eMARS.

Daily results of the number of patients in each grouping are then compared with statistical norms. Classic symptoms, such as respiratory distress or chest pains, are tracked as groups. Unusual levels or trends of symptoms could indicate the

"EMA's BI infrastructure has become a competitive advantage, because the clinical intelligence EMA is able to provide has dramatically increased customer hospital satisfaction, and has differentiated EMA in three new contract wins over the past year."



JONATHAN ROTHMAN  
DIRECTOR OF DATA  
MANAGEMENT,  
EMERGENCY  
MEDICAL ASSOCIATES

- Bio-surveillance monitoring
- Enhanced Emergency Department operations
- Consolidated data
- Shared data across contracted sites

EMA realized that the solution it was building to

could also be used to create a

early stages of an outbreak. In response, the system e-mails alerts to key emergency physicians across the EMA physician/hospital network, as well as state and local authorities in New Jersey and New York.

Most recently, on March 14, 2006, EMA noted a dramatic increase in pediatric volume at one of its contracted sites for the previous day. The surveillance system enabled a drill-down on the information, and the investigation enabled EMA to alert the site's ED nurse manager as well as the county epidemiologist's office about the reason for such a large increase. This knowledge saved resources, time, and money for both the hospital and the state. The anomaly lasted only one day. ▲

This category reprograms organizations that customize off-the-shelf business intelligence software utilizing tools such as visualization, prediction and presentation aids, etc. Examples include multi-dimensional cubes driven by historical and operational information streams, dynamic querying and reporting systems, BI dashboards for executives, and mobile application deployment for process optimization and efficient data collection.

2006 HONOREE

## BNSF RAILWAY

FORT WORTH, TEXAS • WWW.BNSF.COM



# Power In Knowledge

BNSF RAILWAY DEVELOPED its Corporate Dashboard to provide insight into critical operating measures for BNSF's decision makers. The Corporate Dashboard, which provides insightful views of key operational measures, improves efficiency by accelerating the analysis process, enabling users to understand information more quickly, and enhancing the ability of departments to make informed decisions.

Key to the dashboard's effectiveness is its CORR (Condition Of the Railroad) map view, which allows users to immediately assess the operational health of BNSF's rail network across 50-plus key operational measures from a single screen.

With CORR, trend analysis of any of the measures is only a click away. The dashboard also enables drill-down to greater levels of detail to answer the inevitable "why?" questions. It further offers a comprehensive geographic presentation of data that is rich in clarity.

The dashboard's power is in its data, technology and visual integration capabilities. In terms of data integration, it leverages an enterprise data warehouse that consolidates data from 24 different operational systems. When it comes to technology integration, the dashboard leverages four key off-the-shelf technologies, as well as internally developed software.

The visual integration functionality provides multiple visualization methods that enable the rapid assimilation of large amounts of data. Available visualization methods include CORR maps, graphs, tables, and geographic maps.

The business impact of BNSF's Corporate Dashboard on the company is four-fold. First, it allows executives and field supervisors to rapidly make operational decisions. Second, it quickly determines the status of key operational metrics.

- Increased efficiency
- Optimized system flexibility
- Agile responses
- Drill-down views

With the Corporate Dashboard,

and because all of the information from the highest-level summary to the lowest level of detail comes from the same system,

"By streamlining our events forecasting process, On-track enables BNSF leaders to quickly determine the bottom line impact of the decisions that they make in running the railroad."

BART BOUDREAUX, DIRECTOR,  
BUSINESS INTELLIGENCE, BNSF RAILWAY

Third, it identifies the areas that require attention, and efficiently drills down from a high-level view to the supporting detail of that view. Fourth, it synergistically operates from the same set of information.

Prior to implementing the dashboard, the head of each operational team had to begin the day by reviewing a set of reports that typically ran over 100 pages. The information in those reports frequently created questions that required users to request or run additional reports, leading to a process that could take hours each day.

On many occasions the detailed reports used different data or formulas than the summary reports. As a result, the detailed numbers didn't agree with those of the summary reports. That incongruity required even more analysis. With Corporate Dashboard, the time required to assess the state of the operation has been significantly reduced, and because all of the information from the highest-level summary to the lowest level of detail comes from the same system, the numbers always add up. ▲

THE ON-TRACK DEVELOPMENT TEAM

Best  
Business  
2006

## Use of Competency Centers to Champion BI Technologies to Enterprise-Wide ROI

2006 HONOREE

INTERMOUNTAIN HEALTHCARE  
SALT LAKE CITY, UT • WWW.INTERMOUNTAINHEALTHCARE.ORG

Intermountain  
Healthcare

# Virtual Business Intelligence

INTERMOUNTAIN HEALTHCARE'S success is in large part due to the commitment of leadership to information management and BI. Although Intermountain has seen many business and clinical improvements over the years due to the implementation of BI technologies and projects, the establishment of a virtual Business Intelligence Competency Center (BICC) a year and a half ago has accelerated the return on investment in BI tools and solutions.

The BICC is led by the Vice President of Clinical Operations, and composed of business operations officers and information systems professionals representing all major areas of Intermountain's organization. Prior to the BICC's creation, BI projects were not managed and coordinated optimally. For example, regional analytic resources redundantly worked on BI projects, unaware of the same work underway in other areas of the company (an estimated 68% of projects have enterprise potential). In addition, very little coordination of projects existed among analyst resources across the company. Beyond that, few or no analytical standards existed, and there were no centralized prioritization processes.

The BICC has provided many benefits to the management and coordination of BI initiatives, including increased communication with Intermountain senior leadership over analytic projects. The BICC reports to COLT, the Clinical Operations Leadership Team, which is composed of senior business and clinical leadership. This reporting relationship has increased communication about, and visibility of, larger strategic BI projects, guaranteeing

that resources are being devoted to projects that support Intermountain's strategic corporate and regional goals.

Other benefits include centralized governance and prioritization of BI projects, a standard implementation and distribution process for completed projects, and centralized influence on strategy and tactical BI infrastructure improvement. Other benefits include a forum for value overhead analysis, i.e., which reports are adding value vs. which aren't, and performance management standardization, which facilitates standardization of hospital KPIs.

In addition to the creation of the BICC,

"Our BI team expedites the process to determine and systemize clinical and operational best practices. Our BI systems help us improve clinical outcomes, reduce costs and increase patient safety and satisfaction."



STEVEN BARLOW,  
MANAGER, ENTERPRISE  
DATA WAREHOUSE,  
INTERMOUNTAIN  
HEALTHCARE

Intermountain has also created the Hospital Analytics Team (HAT) to work collaboratively with the BICC to make BI an invaluable resource to Intermountain's future growth. HAT is composed of analysts/statisticians representing many different regions across Intermountain and clinical support services. It is currently composed of nine members, whose primary competencies and skills include expertise in databases, SQL, statistics, BI tools, and healthcare. This pool of resources, combined with the oversight and leadership of the BICC, provides Intermountain with a tremendous resource to better utilize its BI infrastructure and tools by focusing efforts on priority projects.

The formation of the BICC and HAT has most importantly improved the services and care that Intermountain offers to its patients and families by providing information directly to Intermountain management. ▲

- Enterprise Business Intelligence coordination
- Enhanced quality improvement initiatives
- Reduced costs
- Centralized information governance

Formation of the virtual Business Intelligence Competency Center and Hospital Analytics Team has

It has done this by

This category recognizes organizations who extend the potential of BI technologies by managing business infrastructure versus simply managing technology. The category clearly identifies the creation of either a virtual or physical BI competency center and what incremental benefits were derived from creating this cross-functional team. Examples of benefits that can be qualified are: supporting strategic goals, enhanced business user satisfaction, better understanding of the value of BI for sustainable growth, improved speed of decision making, and lower staff and/or software costs.

2006 HONOREE

IBM CORPORATION  
RESEARCH TRIANGLE PARK, NC • WWW.IBM.COM

IBM

## Empowering A Global Organization

KEY ISSUES PRIOR to the creation of the IBM Business Performance Management Center of Excellence (BPM CoE) included decentralized funding for financial systems, a disjointed process for identifying technological solutions, ambiguous processes for the design and development of applications and autonomous operational support. Without clearly defined methods, including a procedure for identifying business solutions, there was a proliferation of independent projects that lead to a redundancy in applications and tools across financial organizations. This redundancy drove a higher cost-to-design ratio for the development and support of financial applications and tools.

Another issue was the impact of the former finance model structure on personnel. Many financial system professionals resided on finance teams, not within a BI organization. There were limited opportunities for these employees to share experiences, serve as sounding boards, and identify similarities in development projects with their peers. In many cases, these boundaries caused organizational limitations. This reporting structure limited the career progression alternatives for many employees.

In order to remedy the former system's shortcomings, IBM decided to create the Business Process Management Center of Excellence with an eye toward centralizing technology investment funding for financial reporting and BI tools. Another goal was maintaining "customer advocacy" through a single point of contact for each IBM Unit and geography, ensuring that all specific business unit and geographic expertise needs were satisfied. Beyond that,

IBM wanted to globally manage the end-to-end deployment of its common tools at the local level while globally enhancing the development, skills and career paths for its financial systems professionals.

As a result of transforming financial support into the Center of Excellence, Finance was able to increase its scope while achieving efficiencies in the process. Careful focus on preserving business process expertise, technology enablement capabilities, and project management discipline ensured the right mix of skills to maximize effectiveness to the business.

Since establishing the Center for Excellence, IBM has realized a multitude of benefits, such as 10% cost efficiencies for supporting BI within Finance in lieu of increased scope of delivery, and the reduction

"Creating our Global Business Performance Management Center of Excellence (BPM CoE) has allowed us to increase efficiency by eliminating redundancies."



MARC BENSON,  
MANAGER, BUSINESS  
INTELLIGENCE,  
BUSINESS PERFORMANCE  
MANAGEMENT  
CENTER OF  
EXCELLENCE

of IT infrastructure through migration to common shared platforms. The company is also now enjoying enhanced reporting/forecasting capabilities via CFO Portal, a robust Web-based interactive, self-service reporting tool. On the financial side, P&L models from three geography models (Americas, Asia Pacific & Europe) have been consolidated into one global business model, and key financial data has been migrated to the Finance On Demand Workplace.

In addition, the implementation of common processes and services is driving standardization, which also drives down costs. Improved end-user support is always welcomed by customers, and IBM is realizing this via focus-driven teams and one-on-one relationships hosted by the customer advocates. Internally, Finance IT professionals are benefiting from a distinct career path with shared concepts, and financial system resources have gained a broader perspective on the financial business. ▲

- Best-of-breed toolsets
- Reduced operating costs
- More efficiently aligned resources
- Better end-user support

IBM's Finance BPM Center of Excellence has enabled the company to

allowing it  
to focus on executing  
transformation initiatives  
that drive value.

Leaders Wanted/CIO Challenge Series

## Challenge #3: Make great decisions contagious.

### Solution:

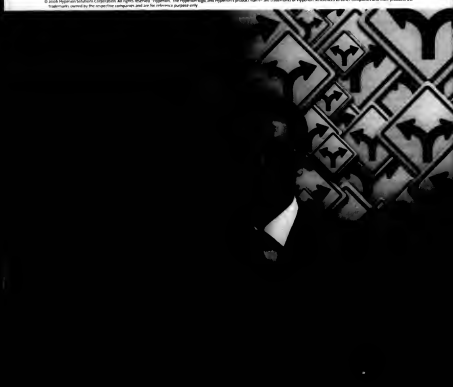
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**# Hyperion**  
The future in sight

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power available. Early flywheels were bulky and heavy, but smaller, lighter designs have emerged, and the price per kilowatt has declined by nearly 50%, according to Pentadyne. Today, units are about the size of a refrigerator and weigh between 1,300 lb. and 2 tons.

Flywheels typically require a bearing replacement every three years, a service that's less expensive than replacing batteries and is usually covered by a maintenance contract. They also have a 20-year life expectancy — much longer than battery UPS units. Because no battery replacement is required, the mean time between failures for flywheels is 50,000 hours vs. 2,200 hours for battery-backed UPSs, claims McGough.

#### Pure and Reliable

Reliability was what attracted Troy Clavel, CEO at credit card service provider Total Card Inc., as he moved into two new data centers in Sioux Falls, S.D. Battery UPSs were designed to provide up to 30 minutes of transitional power, but the actual amount of time available was unpredictable because the batteries would degrade over time.

"In South Dakota... power is always interrupted by high winds, thunderstorms, new construction," Clavel says, noting that he expects to suffer 15 to 21 major power events this year. "The more [hardware] take a hit, the shorter the life cycle is," he says.

Flywheel technology also helped Clavel resolve problems with fluctuating power that had led to a string of computer failures in his previous facility. The flywheel operates inline between the incoming power supply and data center equipment, constantly feeding the data center with conditioned

ACTIVE POWER's recently introduced CoolAir puts a different spin on UPS power. The system uses compressed air to drive a small turbine that generates three-phase power. It also releases cold air as a by-product.

The unit consists of 4,500 psi compressed air cylinders attached to a 1,300-degree thermal storage unit that heats the air before passing it through an expansion turbine. The 100kVA system can provide a maximum of 80 kilowatts of power for up to 18 minutes. Because the turbine takes a few seconds to come online, the unit includes a small flywheel to provide bridge power. Both the air tanks and turbine can be stored outside the data center to save space.



power and buffering it from the source. Because the flywheel supplies the data center all the time, there is no transition during a power interruption unless the system finally cuts over to the generator, he says. That process takes about nine seconds — well under the 20 to 25 seconds the flywheel can deliver.

Total Card uses Pentadyne's VSS-dc model. It cost just under \$50,000 to install and has sailed through three power events since April, Clavel says. That's more than a comparable battery UPS costs, but the flywheel model "will save us in the long term in [a reduction in] downtime and maintenance issues," he says.

Cooling is an added benefit. "Backup power doesn't do any good if you can't keep the servers cool," says CoolAir President and CEO Jim Chisham. CoolAir is unique in offering both backup power and backup cooling, says

Frank Saeed at Frost & Saeed. But how useful is that? The first-generation units can generate "a couple of tons of AC," although the device does not yet have a way to distribute that cool air, which is simply released into the surrounding area, Chisham says.

Kevin Bayer, senior staff electrical engineer at Freescale Semiconductor, has tested the system. "For a short period of time, it could cool

a data center," he says, adding that pricing is "in the range of what he'd pay for redundant battery-backed UPSs. CoolAir sells for \$35,000. A \$4,000-per-year service contract includes air tank delivery.

The technology is not a good fit for Freescale, however. "For a site with emergency power throughout the use here, I can't justify putting one of these in," Bayer says. That, he adds, "it would work really well in remote buildings... where you don't want the expense of putting in an emergency generator but need enough power — maybe five or 10 minutes — to allow equipment to shut itself down." That's exactly the target market, says Saeed. She says it's best suited to "small and medium-size data centers with 20 racks or so that don't have a generator."

— ROBERT L. MITCHELL

flywheel systems start at capacities of about 100 kilowatt amps (kVA). The average data center uses about 220kVA, Saeed says, but batteries are more economical until data center loads reach 500kVA. Flywheels make the most sense when used as bridge power in large data centers with more than 100 racks plus backup generators, she says.

Freescale's Bayer says his cost analysis yielded different numbers. "150 [kVA] and above is where the break point is," he says. "At the six-year mark, we broke even. At the 10-year mark, we were at 60% less than the cost of a battery UPS."

Once you account for the fact that you don't have to replace batteries, he adds,

"you're well on your way to savings."

Curtis Williams, a staff engineer at Freescale, is already planning to add flywheel capacity to the Austin data center, and the IT staff is considering it for an adjacent facility.

Flywheel technology may not be a good fit for every data center. "If you're looking at a room that only has to be up for 15 minutes, and they don't care about outages, I'm not sure this is the technology you want to go with," says Williams. But organizations with large data centers and backup generators should consider it, says Bayer, noting that "they could save money in the long run and also improve reliability." ▀

## WE MADE IT ENTERPRISE-WIDER







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Flywheels typically require a bearing replacement every three years, a service that's less expensive than replacing batteries and is usually covered by a maintenance contract. They also have a 20-year life expectancy — much longer than battery UPS units. Because no battery replacement is required, the mean time between failures for flywheels is 50,000 hours vs. 2,200 hours for battery-backed UPSs, claims McGough.

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## Wind Power for the Data Center

### ACTIVE POWER'S COOLAIR USES A COMPRESSED AIR TURBINE INSTEAD OF BATTERIES TO DELIVER UNINTERRUPTIBLE POWER

**ACTIVE POWER'S** recently introduced **CoolAir** puts a different spin on UPS power. The system uses compressed air to drive a small turbine that generates three-phase power. It also releases cold air as a by-product.

The unit consists of 4,500-psi compressed air cylinders attached to a 1,300-degree thermal storage unit that heats the air before passing it through an expansion turbine. The 100kW system can provide a maximum of 80 kilowatts of power for up to 15 minutes. Because the turbine takes a few seconds to come online, the unit includes a small flywheel to provide bridge power. Both the air tanks and turbine can be stored outside the data center to save space.



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Farah Saeed at Frost & Sultman. But how useful is that? The first generation units can generate "a couple of tons of AC," although the device does not yet have a way to distribute that cool air, which is simply released into the surrounding area, Clizhem says.

Kevin Beyer, senior staff electrical engineer at Freescale Semiconductor, has tested the system. "For a short period of time, it could cool

a data center," he says, adding that pricing is "in the range of what I'd pay for redundant battery-backed UPSs. CoolAir sells for \$35,000. A \$4,000-per-year service contract includes air tank delivery.

The technology is not a good fit for Freescale, however. "For a site with emergency power throughout like we have, I can't justify putting one of those in," Beyer says. But, he adds, "It would work really well in remote buildings... where you don't want the expense of putting in an emergency generator but want enough power — maybe five or 10 minutes — to allow equipment to shut itself down." That's exactly the target market, says Saeed. She says it's best suited to "small and medium-size data centers with 20 racks or so that don't have a generator."

— ROBERT L. MITCHELL

power and buffering it from the source. Because the flywheel supplies the data center all the time, there is no transition during a power interruption unless the system finally cuts over to the generator, he says. That process takes about nine seconds — well under the 20 to 25 seconds the flywheel can deliver.

Total Card uses Pentadyne's VNS-de model. It cost just under \$50,000 to install and has sailed through three power events since April, Clavel says. That's more than a comparable battery UPS costs, but the flywheel model "will save us in the long term in [a reduction in] downtime and maintenance issues," he says.

Flywheel systems start at capacities of about 100 kilowatt amps (kVA). The average data center uses about 220kVA, Saeed says, but batteries are more economical until data center loads reach 500kVA. Flywheels make the most sense when used as bridge power in large data centers with more than 100 racks plus backup generators, she says.

Freescale's Beyer says his cost analysis yielded different numbers. "50 [kVA] and above is where the break point is," he says. "At the six-year mark, we broke even. At the 10-year mark, we were at 60% less than the cost of a battery UPS."

Once you account for the fact that you don't have to replace batteries, he adds,

"you're well on your way to savings."

Curtis Williams, a staff engineer at Freescale, is already planning to add flywheel capacity to the Austin data center, and the IT staff is considering it for an adjacent facility.

Flywheel technology may not be a good fit for every data center. "If you're looking at a room that only has to be up for 15 minutes, and they don't care about outages, I'm not sure this is the technology you want to go with," says Williams. But organizations with large data centers and backup generators should consider it, says Beyer, noting that "they could save money in the long run and also improve reliability." ■

## WE MADE IT ENTERPRISE-WIDER



# Deconstructing Complexity

A family of related concepts may help companies make sense of the murky.

**Eric Bonabeau, CEO of Icosystem Corp. in Cambridge, Mass., has devoted his career to the unraveling of complex systems. Bonabeau, who holds a Ph.D. in theoretical physics from Paris-Sud University in France and was once a research fellow at the Santa Fe Institute, recently has been working with companies on applying complexity science to business problems.**

Complexity science holds that systems that appear impossibly complicated when viewed top-down can often be readily understood by examining the simple rules employed by their low-level elements and by watching how those elements adapt to changing conditions, thus causing the behavior of the system as a whole to evolve. Applications have traditionally included logistics, factory scheduling, military operations and telecommunications. But Bonabeau recently told Computerworld's Gary Anshel why much broader applications are at hand.

**What are some useful ideas from complexity science? One is the idea that we need to understand systems from the bottom up in order to capture emergent phenomena and the behavior of very complex systems. For example, it's very difficult to understand traffic unless you understand the behaviors of individual drivers. Only then can**

you start to understand some of the weird properties of traffic. For example, a traffic jam moves backward, but all the cars move forward. You need to capture the interactions between units in order to predict or understand the aggregate behavior. That applies to a lot of IT systems. The generic approach to this is called agent-based modeling.

Second, biology shows us that systems adapt to a changing environment and to challenges, be they internal or external to the system. Applications include military systems that have to be flexible and robust, and adaptive online questionnaires that try to present the best experience for the customer.

Lastly, a big source of inspiration is evolution. It provides a powerful tool for searching very large spaces. We developed a hacker/intrusion-detection system for the Army that found weaknesses in a system by evolving attack scripts.

**What are some specific techniques that take advantage of these ideas? When a customer makes a decision, that has a temporal extension—the decision happened in time.**

For example, when I call my wireless carrier and say I want to switch, it appears to the carrier that I made the decision today. A lot of companies, even

if they had data about me, would treat it at the aggregate level. There's a big difference between an agent who complained five times a year ago and one who complained five times in the past three weeks. As an IT manager, you may store transactions over time, but the way you use them completely ignores the temporal dimension. But with behavioral modeling, you can model the experience and understand how people change their opinions over time. Another example is distributed storage. The cost of a storage system is mostly the cost of managing it. So you simplify the administration by letting the network self-organize, optimizing on the fly. The other objective is robustness and resilience. We need to continue to invest in self-organizing software systems, which will shift the load from the IT manager to the system itself.

**How pervasive are applications of complexity science today? The biggest success of the Santa Fe Institute is that complexity science thinking is now everywhere. But people don't know it; they are just using the concepts. The Internet has forced people to think about all kinds of complexity-style things—peer-to-peer networks, automatic computing, supply webs and wikis—they all smell of complexity science. I was the first to think that Wikipedia would never work, and I'm forced to admit it does work. I'm talking to clients who never thought of wikis as business tools, and they are saying, "Wow, you are right!"**

**What's the future of agent-based modeling? Agent-based modeling is starting to fulfill some of the promises that have been left unfulfilled by predictive analytics in applications like customer relationship man-**

agement. And I think agent-based modeling might be integrated into computer-aided design tools that will include crowd behavior simulations to see how a building might be evacuated quickly, for example, or how people will navigate a space.

**Will we be able to buy things like agent-based modeling software packages? For the IT community, the interesting thing will be real-time, agent-based modeling in enterprise resource management systems. These complexity science concepts will be integrated with other things. They'll be part of something else.**

**Do complexity science methods support traditional optimization techniques? People often view a problem as an optimization problem just because it lends itself to optimization algorithms. But, in fact, the problem may not be an optimization problem at all. That's where the future is, where you mix evolutionary computing, to search a very large space, with human intuition. We call that the "Hunch Engine." The Hunch Engine basically says, "All the computer can do is search fast, but in the end, only the human being can tell the difference between something**

that's good and not good."

**What's an example of a Hunch Engine application? A lot of postal organizations apply optimization software to minimize travel times, to make routes as short as possible. But that solves the wrong problem. The mailmen are really unhappy about the new routes, so you actually lose productivity.**

The idea here is to combine minimum travel times with the subjective criteria that the mailmen use. So you get hunches from all the mailmen—I like this route but not that route—combine that feedback, run the model again and show them a new set of routes. After a few iterations, you end up with routes that satisfy both the mailmen and the management.

Crew scheduling is a major headache, and employee satisfaction at airlines is very low. So if you can find a way to satisfy management objectives as well as employee objectives, you are a winner.

**What's the future of the Hunch Engine? Ultimately, what you want is a brain implant. You want the implant to do the computation for you and connect directly to your right brain, where you can do the evaluations.**



# Spam Fight Escalates

## Wily hucksters use clever ruses to bypass corporate defenses

BY JEREMY KUSE

**C**OMPUTER SECURITY analysts who fight spam face the same thankless task as goalkeepers: They don't get much credit for the unsolicited e-mail they stop, only demerits for the ones that get through. But those few messages that wriggle past increasingly sophisticated filters constitute the greatest threats on the Internet. The sheer volume of spam threatens to bring the Internet to a crisis point. The amount of all e-mail traffic that is spam has recently risen to 89%, according to the Messaging Anti-Abuse Work Group in San Francisco.

"We see spam just going up to the point where Internet servers start having difficulty," says Steven Linford, CEO of The Spamhaus Project Ltd., a London-based nonprofit that generates a list of spam sources that organizations can use to block spam. "Spam will tend to increase to where it will be 99% of all e-mail on the Internet," he says. "At that point, governments will start to take notice."

Antispam software usually aims to

filter out 98% of bad messages — any higher level of filtering tends to snag real messages.

So spammers are aiming for the 2% window, and in the past few months, they have even honed new methods to hit the in-box bull's-eye, experts say. Sophos PLC, one of many vendors of antispam software, has analysts at its SophosLabs facilities in Abingdon, England; Vancouver, British Columbia; Boston; and Sydney, Australia, watching the Internet around the clock for threatening spam and malicious software.

The Sophos lab in London doesn't look much different from any other office. But it's mission control for security analysts with special rules: No computers or electronic equipment can be brought inside, and the room remains locked.

Sophos catches spam in "traps" — abandoned e-mail addresses and domains that have been donated for the purpose of research. Messages sent to those addresses are invariably spam. Sophos catches hundreds of new malware and spam samples each day;

many can be stopped immediately if the samples show characteristics that are similar to known problem code.

New, unique spam messages are prioritized and doled out to researchers for inspection. Spam does leave a trail, albeit one that's often a confusing series of hops between servers around the world. After following the trail, Sophos updates its software to block the spam source.

"We're unusual in the respect that we like to receive spam," said Mark Harris, global director of SophosLabs.

On a recent day, a message entitled "Let's go" landed in a spam trap monitored by Sophos. The message contained a link to a Web site selling "human growth hormone," a product advertised recently through spam aimed at U.S. users, says Paul Baccus, a spam research analyst.

A person in Detroit had registered the Web site with a hosting company in Hong Kong less than an hour before the spam message was received by Sophos, Baccus says. The registered name, obtained through Whois data, may not be real, says Graham Chisley, chief technology consultant at Sophos.

The state abbreviation in the Whois database was incorrect. A call to the phone number listed found it disconnected. Adding to the ruse, the return address for the spam message contained a "pl" prefix, indicating that it came from Poland. But that data is also easily faked.

The approach is one in a bag of tricks spammers use to beat security software. Lately, analysts have noticed a sharp upturn in messages with images containing words, which can defeat text-analysis tools.

Another spam method is adding or subtracting a few pixels in every image,



which to a computer makes the message look unique and good. To defeat optical character recognition (OCR) technology, which can read words embedded in images, spammers introduce colored pixels to create image noise.

"Basically, they've got a little program which is actually able to generate a slightly different e-mail each time, even though the picture to the human eye looks absolutely identical," says Simon Heron, director of operations at security vendor Network Box Corp. Spamhaus is also planning to roll out a tool called Policy Block List (PBL), which will block a large number of IP addresses of end-user computers that should be using their Internet providers' servers to send mail, Linford says. Most computers that directly send out e-mail are spammers, he says.

"It's an arms race with spammers," says Linford. "Obviously, by this time next year, the spammers will have found a way around [the PBL]."

Kirk writes for the *EDG News Service*.

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# Congratulations Award Recipients!

Computerworld's Business Intelligence Perspectives proudly announces the results of the third annual "Best Practices in Business Intelligence" Awards Program. This program honors IT users "Best Practice" case studies selected from a field of qualified finalists.

Honoree Award Recipients in each of the following categories were recognized during an award ceremony at Business Intelligence Perspectives at the Green Valley Ranch Resort in Las Vegas, Nevada on September 27, 2006.



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- Finalists:*
  - Holdings Demands, Kansas City, Missouri
  - MWA/Bank, Rock Island, Illinois
  - United States Army Armament Research, Development and Engineering Center (ARDEC), Picatinny Arsenal, New Jersey

## Data Visualization, Prediction and Presentation by Leveraging Customized Solutions

### Honorees

- Emergency Medical Associates, Livingston, New Jersey
- BNSF Railway, Fort Worth, Texas
- Finalists:*
  - Health Care Service Corp., Richardson, Texas
  - Metro St. Louis, St. Louis, Missouri
  - Plano Independent School District, Plano, Texas

## Information Retrieval and Reporting by Leveraging Off-the-Shelf Enterprise Software

### Honorees

- CME (Chicago Mercantile Exchange), Chicago, Illinois
- Reader's Digest, Pleasantville, New York
- Finalists:*
  - HBOS plc, Halifax, Great Britain
  - Time/Warner Retail Sales & Marketing (A Time Warner Company), New York, New York
  - Whitcomb, Borton Harbor, Michigan

## Planning, Designing and Building the BI Infrastructure

### Honorees

- R. L. Polk & Co., Southfield, Michigan
- Cisco Systems, San Jose, California
- Finalists:*
  - Georgia Department of Transportation (GDOT), Atlanta, Georgia
  - Leeds Hospital, Leeds, Great Britain
  - PayPal Inc., San Jose, California

## Use of Competency Centers to Champion BI Technologies to Enterprise-Wide ROI

### Honorees

- IBM Corporation, Business Performance Management Center of Excellence, Research Triangle Park, North Carolina
- Intermountain Healthcare, Salt Lake City, Utah
- Finalists:*
  - Accorcare, Chicago, Illinois
  - Christian Broadcasting Network, Virginia Beach, Virginia
  - Walero Energy Corporation, San Antonio, Texas

## Judging Criteria

Judges will evaluate and rank the finalists in each category according to their substantiated BI-related solution attributes and achievements against a set of criteria as follows:

- Financial return and measurable payback (return on investment, assets, resources) through created/protected revenue opportunities or cost savings.
- Strategic importance to the business.
- Substantive customer impact (service, retention, acquisition).
- Positive impact on other business/organization units.
- Addresses system and department interoperability issues and heterogeneous platform integrative challenges.
- Provides a strategic advantage to the business/organization while anticipating and accelerating the deployment of future storage solution initiatives.
- Supports the efficient and reliable data, information and application sharing/access between personnel, departments, divisions, etc.
- Addresses challenges of data, information and application security, recovery, business continuity, etc.

## Thank you to our "Best Practices in Business Intelligence" Judges for 2006:

- Gregory Corrigan, Phil Anel
- Tom Davenport, Babson College
- Heather Havenstein, Computerworld
- Brian Hickey, McKesson
- Ralf Velle, Fish & Richardson P.C.
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1. **NAME REFERENCE:** a comparison of leading acceleration techniques
2. **MANAGE 2:** a multi-driven router of top acceleration products
3. **INSIDE-OUT:** pros and cons of in-house management vs. managed service providers
4. **STRATEGY-DRIVEN:** focus on individual problems or plan for any possibility—the answer
5. **SURGICAL SKILLS:** how to work the OS model for maximum throughput
6. **CRYSTAL CLEAR:** the management case for transparent solutions
7. **NOT DO FUDGE:** the limits of a scalable solution
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# Measuring the Value of Metrics

**Our security manager used to hate metrics, but now he's the one telling his staff to collect and report them. By Mathias Thurman**

**O**NE TOPIC most information security professionals hate is metrics. When I was working as a security analyst and later as a security engineer, I always hated when my boss asked me to pull logs or query the remedy ticketing system and then use the metrics to report on various aspects of what I did or how well our security infrastructure was protecting the company.

Now that I'm the manager, I'm the one who asks for such measurements every quarter, and my guys snicker at me. But as a manager, I've learned to appreciate what metrics can tell me — and what they can help me not.

Every major department within the IT organization of my company is responsible for gathering quarterly data into key performance indicators (KPI). An Internet search will turn up several definitions of KPIs, some saying they are interchangeable with balanced scorecard metrics. In my mind, they are the same thing: metrics.

At my company, we use KPIs to measure the effectiveness and efficiency of key areas of IT. For example, to measure the effectiveness of our help desk, we report on the number of trouble tickets closed within a certain amount of time. To measure the efficiency of our e-mail infrastructure, we report on the average time it takes for an e-mail message to be delivered. (That measurement also serves as a capacity planning

tool. When e-mail delivery time increases, we know we need to increase our e-mail delivery capacity, whether in the form of network bandwidth, hardware or memory.) We report on the percentage of backups that fail, the percentage of IT projects delivered on time and so on.

In the security realm, calculating a balanced scorecard can

be somewhat difficult, and alternative metrics are needed. You might think that if the company didn't get hacked, wasn't robbed of intellectual property

didn't suffer a denial-of-service attack or have malicious code such as viruses, worms and Trojan horse programs propagating through its network, then the metrics would be easy — clearly, we're doing our job. Well, it doesn't work like that, and I have to be creative in my quarterly metrics.

My predecessor tackled this problem by using metrics that, for all intents and purposes, seemed to have been pulled out of some CISSP book. They provided nothing meaningful. For example, one metric measured the percentage of the infrastructure meeting ISO 17799 compliance. First of all, the company has never been

through an ISO 17799 certification. Second, metrics on the elements of the ISO 17799 framework don't really tell you anything.

## Metric System

Early on, I sat down with my team to brainstorm metrics, focusing on the tools we already have in place that could be leveraged for that purpose.

For example, we use Trend Micro tools to combat viruses, and our deployment includes Trend Micro Control Manager (TMCAM), which can report on various aspects of the Trend Micro software agents. So we use TMCAM to report the percentage of managed desktops that meet the recommended antivirus version and pattern file. I have combined that with reporting from our Microsoft Systems Management Server to show how many servers are up to date on the recommended security patch level, and how we have virus and security patches in one measurement. (I use the word managed, since some workstations and servers by design don't have antivirus tools installed, nor are they regularly patched.) These incidents are in a lab environment and certain engineering systems.

And since we use Remedy for our help desk and general trouble-ticketing system, we report on average time to resolve a security incident.

Another tool came to hand recently when we implemented a Juniper intrusion-detection sensor. Now that it's tuned, we use it not just to detect hacking activity, but also to report on violations of our unacceptable-use policy — we can measure the percentage of network traffic that represents unauthorized use. This metric is complicated by the fact that the definition of unacceptable

use changes frequently as new or recently discovered applications or technologies are added. When I report this metric, I have to add the caveat that what we measure is always shifting. Still, it's meaningful, and our CIO loves to see how many users are spending their day downloading MP3s or using Skype to talk to their college buddies.

I also report the percentage of our network covered by the intrusion-detection system (IDS). I like to use this figure to help justify additional IDS sensors. Currently, we're able to monitor only 40% or so of our overall network traffic. My goal, of course, is 100%. My CIO raised his eyebrows when he saw evidence that a lot of employees are using Skype, even though we're monitoring only 40% of our overall bandwidth. For a second, I thought he was going to break out his checkbook and cut me a check to purchase additional sensors. It didn't happen this time, but I'll have to work on that for next quarter.

I could expand my reporting to include information from Tripwire, Smart Filter, firewall logs and other sources. But the other departments report on only four or five items, and I feel that is an appropriate number for my group as well—to the relief of my metric-hating employees. So far, I've had the opportunity to report these metrics only once, but upper management was very interested in observing the changes over time. Therefore, I expect that as time progresses, metrics will be a tool to measure the effectiveness and make a case for an increase in resources to allow me to hire more engineers and purchase more infrastructure. ■

### WHAT DO YOU THINK?

The week's journal is written by a real security manager, "Mathias Thurman," whose name and employer have been disguised for obvious reasons. Contact him at [mathias\\_thurman@yahoo.com](mailto:mathias_thurman@yahoo.com), or join the discussions in our security blog: [computerworld.com/blogs/security](http://computerworld.com/blogs/security)

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## SECURITY LOG

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## BRIEFS

**Kace Management Appliance Updated**

■ Mountain View, Calif.-based Kace Networks Inc. has released the latest version of its system management appliances aimed at small to midsize businesses running Mac, Windows and Linux desktops and servers. The new KBox 1000 Series is an upgrade from the prior KBox IT Management Suite. New features include flexible wizard-based reporting with more than 50 preconfigured reports and dashboards, application monitoring to ease license compliance and harvesting, and support for Mac OS X and Red Hat Linux. An optional help desk module provides trouble ticket submission, tracking and management capabilities. Prices start at \$2,500 for 100 nodes.

**DYS Upgrades IM Collaboration App**

■ DYS Analytics Inc. has upgraded its Collaboration Control e-meetings and instant messaging application to make it compatible with IBM's recently unveiled Lotus Sametime 7.5 enterprise IM and webconferencing collaboration application. Version 7.5 provides improved regulatory compliance and other corporate liability protection, according to the vendor. Collaboration Control monitors, analyzes and reports on IM and webconferencing use to support server load balancing and to provide archives and alerts on IM conversations. The upgraded version is available now and starts at \$5 per Sametime user, according to the Waltham, Mass.-based company.

**Clrix Announces NetScanner 7.0**

■ Clrix Systems Inc. has announced Version 7.0 of its NetScanner Web application delivery software. NetScanner 7.0 can support up to 15,000 servers in a single application system and has new security features, according to the vendor. It's available now starting at \$17,400 per system.

DOUGLAS SCHWEITZER

# Second Look at Linux Proves Persuasive

**B**ACK IN 1991, a brilliant and determined 21-year-old computer science student at the University of Helsinki had an idea. From what I understand, Linus Torvalds was unhappy with MS-DOS, and since he was already familiar with Unix, he decided to try his hand at creating his own PC-style operating system. He did just that and called it Linux.

Linux has since evolved to become ever more refined and useful. Distributed as open-source, Linux is the product of the combined brainpower of millions of brilliant programmers around the world, each making a contribution to it. It has reached the point where some foresee that it will become a serious threat to Microsoft.

Having toyed with computers since the late 1970s, I can say I've seen many predictions about which technologies will likely make it and which ones will fall by the wayside.

With demonstrated staying power, Linux looks to me like it's ready for prime time. As evidence, I recently shook the dust off my old Compaq 1800-LX notebook computer to see how easy it would be to install a modern-day Linux operating system. With so many distributions available, I began a Google search for something lightweight and small that could be downloaded quickly and was contained on a single disk. My search led me to several Linux distributions, and I chose Mandriva One, which came as an ISO CD image for download.

After I downloaded and burned Mandriva One to a CD, I simply inserted the CD into my laptop, set the machine's BIOS to boot from a CD and restarted the machine. The beauty of some of today's Linux distros is that



they come as ready-to-use disk images, which you can use directly from a CD, enabling you to install them to your hard drive at a later point in time.

Once the operating system booted, I was pleasantly surprised to see that everything was working. It's always good when your hardware is detected and working properly, something I found lacking in early incarnations of Linux. I liked the K Desktop Environment (KDE) in my early Linux installs, and this version did not disappoint on that front.

For Linux to be a successful operating system, there must be plenty of useful applications available for it. I'm happy to say that many of today's distributions include word processing, instant messaging, e-mail and Web browsing at the ready.

The second requirement is ease of use. I found early versions of Linux weren't very user-friendly. So this time around, I used my 7-year-old son as my test subject. Growing up in a Windows

world at school and on some of our machines at home, I knew he was familiar with the concept of clicking on "Start" to access applications. KDE in Linux works the same way.

I gave him a little lesson on how to use it, and off he went. On his own, he's able to boot up the machine and get himself online to his favorite kid Web sites without any problems at all meaning today's Linux has a short learning curve.

The only hitch in my whole experience was the inability of Mandriva to detect my wireless network card. While I could have spent a few hours downloading and installing code to get it to work, that would have defeated the purpose of my ease-of-use test.

Since the laptop's Ethernet port worked flawlessly when plugged directly into my router, I decided it might be easier if I purchased an inexpensive Ethernet-based wireless gaming adapter and have it act as a bridge to my wireless router. I found an older Linksys WGA1b adapter online for \$20. Using my wife's Windows-based laptop, I plugged the adapter in, fired up the supplied adapter installation software and then went about the process of configuring it to work with my wireless home network.

The good news was that as soon as I plugged that adapter into my Linux-based laptop, the laptop immediately went online and was ready for Internet and e-mail action.

All in all, I must say that this version of Linux was easy to use, and it has all the office, Internet and multimedia tools I could want — and it was free! Best of all, with only a few mouse clicks, I was able to install Mandriva directly to my hard drive, which, incidentally, went without a hitch.

What can I say? It's not your daddy's Linux anymore. ■

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John Dick, CO  
Regions  
Financial Corp.

★ **THE LESSON:** It's important to push decisions down into the organization. Ninety percent of the time, people know what the right answer is, but they may not have the confidence — particularly when they're junior-level — to make the call. Having decisions made lower in the organization provides a more powerful resolution.

#### ▶ HOW I LEARNED IT:

The "Aha!" moment for me was when I worked at a Big Five public accounting company. The emphasis there was on coming to the table with a whole body of work — the term was "completed staff work" — that was a result of your analysis. That included the situation, an examination of the likely alternatives, and your recommended solution. Rather than snap halfway, you were expected to provide the client with the right decision.

When I first arrived at Regions, when something needed to be decided — say the timing of the rollout of a program — some people would come to me and say, "Here's the analysis, and here are the alternatives." And then they'd kind of look at me, waiting for the decision. To really leverage the power of the organization and of the people in it, you have to push the decision back to them.

#### ▶ HOW I PASS IT ON TO EMPLOYEES:

I always ask what they would do, and I worked to get that philosophy instilled in the organization. Now, they feel unprepared if they haven't thought through what they would do in a given situation. If I'm in a meeting with three or four people at different levels of the organization, I will often ask the most junior person in the room what option they think is best, and frequently I'll go with that direction. It's a matter of reinforcing to them that they usually have more information than me, and if they've done a good job thinking it through, then they're in a good position to make the call. It demonstrates that I value not just their opinions but also their thought process and assertive

decision-making. For the organization, it accelerates our speed to market and capacity, and it creates the environment that high performers want to work in.

The tag line I use is that it's important to encourage people to lead themselves, and decision-making is one of the more salient parts of leadership. There may be places in the organization for people who want to be told what to do. But one of the traits I look for is decision-making and the ability to empower yourself. When you enable that energy and align it with your goals deep in the organization, you see sustainable, breakthrough levels of performance.



Bette Walker, CO  
Delphi Corp.

★ **THE LESSON:** It takes a long time to get a change agenda understood in a global organization. Say you want to change a project management standard and apply it consistently across the globe. It takes an average of nine months of consistent communication before the organization begins to understand and embrace it.

Many times, when I've started on a change agenda, I'm up to agenda item No. 4 and the organization is really just starting to internalize item No. 1.

#### ▶ HOW I LEARNED IT:

The big shock was why it took me so long to learn it! But I learned it by spending a lot of time in the organization, away from my office. And everywhere I go — whether to another campus or to another country — I make a point to do a "diagonal slice meeting," where I ask a half-dozen or dozen employees who aren't direct reports to meet with me. Supervisors are not invited. I ask them to share one thing they're doing right and one thing they'd like to improve. It's amazing to see, like clockwork, at the nine-month mark, people around the world consistently say the best thing we're doing is the initiative we started nine months before.

The test of whether your leadership is working is when you go away from the epicenter of the organization and into the operating units and listen to people in operations who are doing the job for you.

Sometimes there's such a cacophony of voices, and sooner or later, you have to bring the curtain down on those voices and decide for yourself the best thing to do.

DAVID RICE, CO, SIEMENS MEDICAL SOLUTIONS USA INC.

I'd like to understand how to make change happen more quickly, but I also don't want a dictatorship. I want people around the world to embrace change and own it.

#### ▶ HOW I PASS IT ON TO EMPLOYEES:

I remind my direct reports that if they're not doing a good job of communicating, coaching and preparing materials in advance, change will take even longer. And I tell them that employees are much more receptive to news of change if they hear it directly from their supervisors. They also need to go back once, twice, three times and make sure people understand the change items. And key messaging is critical; provide consistent presentation material with speaking notes, along with key message documents. When people in the organization hear the same language and start talking to one another, the organization starts to carry the message and own the change agenda.



David Rice, CO  
Siemens Medical  
Solutions USA Inc.

★ **THE LESSON:** It's important to listen to a wide variety of people, but ultimately you have to listen to your own thoughts and feelings as to what's the right thing to do. Sometimes there's such a cacophony of voices, and sooner or later, you have to bring the curtain down on those voices and decide for yourself the best thing to do. Otherwise, you end up with a form of cognitive dissonance.

Anyone in a leadership position who thinks that someone sooner or later will present them with a golden key probably shouldn't be in that leadership position. You have to be willing and able to take all the input, synthesize it and decide for yourself the right thing to do, even if what you think is different from all the input you've got. Ultimately, it's what you're being paid to do.

#### ▶ HOW I LEARNED IT:

I learned it from the chief financial officer I worked for, five or six years ago. I was lamenting about a project-related decision, and after he let me yammer on for a while, he looked at me and said, "What do you think?" It was an obvious question, but I felt like a dock for not asking myself.

The other thing I learned during that time was that there are times when you stack up all the input, and it all adds up to the conclusion that it can't be done. The problem is, the thing that can't get done is sometimes exactly what has to get done. So the leader has to have a form of "impatient patience," where you say, "I've heard what you said, and I understand the implications, but we still have to do this or that." You can't be dissuaded from taking action just because at first blush it seems irrational.

#### ▶ HOW I PASS IT ON TO EMPLOYEES:

I've said to people over the years that sometimes the absolutely worst decision is to not make a decision, and that the structure of the company wouldn't allow them to make such a poor decision that they'll go off the edge of the cliff. There's almost an inherent safety net so they're better off taking their best shot. Being a leader means having to make tough decisions. If you're not comfortable with that, you're probably in the wrong job.

Continued on page 42

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Continued from page 40



Bill Spooner, CEO  
Sharp HealthCare

★ **THE LESSON:** The importance of employee motivation. You've got to do everything you can to make your employees proud to work for you and proud of what they're doing. They need to sense the importance of what they're doing.

#### ▶ HOW I LEARNED IT:

I actually learned it from a really good boss I had 30 years ago. We were a fairly small organization, and he really worked hard to make every individual feel important by taking the time to talk with you and have an interest in what you were doing. He built loyalty that way.

#### ▶ HOW I PASS IT ON TO EMPLOYEES:

It's a mix of organized activities and individual creativity. We do little things like buy them pins and shirts — small tokens to say thank you. At staff meetings, we ask employees to show off the work they're doing. And we also have an employee satisfaction team, which makes sure we follow through on what's important to the staff. We also do a "leader of the quarter" award, which is a totally employee-driven activity. We created an employee action team that defined the characteristics they thought were important in a leader, and at our quarterly staff meeting, everyone votes on three finalists. Afterward, we have a little celebration and announce the winner, who gets a plaque on the wall, a \$100 gift certificate and a lot of praise.

“Role models need to walk the talk. . . . People are expecting you to do the right thing, and you absolutely have to do, even if it's difficult.”

Rick Davidson, CO  
Mampower Inc.

# A LEADER ON LEADERSHIP



the leaders of an organization to be the teachers.

Only small minorities of leaders do this, but the ones who do are role models. And they don't teach Harvard Business School cases; they get their leaders to work on real projects as part of their development. This is what former GE CEO Jack Welch and now Jeff Immelt at GE do. GE has sent teams to Southeast Asia to look for acquisitions and to Korea to assess the GE strategy. Roger Enrico, former CEO at PepsiCo, sponsored over 200 growth projects at Pepsi that resulted in over \$2 billion in new revenue growth.

#### What is the worst thing a leader can do?

Not develop other leaders. We have a terrible track record in the U.S. on this front. At the CEO level, it means not having a successor, thus indicating a broken leadership pipeline. Think of the examples. John Akers gets fired at IBM, and they have to go outside the organization to get Gerstner. Merck had to go outside and get Ray Gilman, who failed. HP went outside twice: Florina, who failed, and then Harv Com in from NCR. The job of a leader is to win today while making the organization better for tomorrow.

#### What is the most important lesson you've learned as a leader of leaders?

I learned the most from Jack Welch at GE. In the mid-1980s, I left the University of Michigan for two years to transform the GE Leadership Development Center — then a 30-year-old corporate university — into an action learning platform for change. Then, because the center only dealt with about 5,000 of GE's 320,000 employees per year, we needed ways of getting everyone engaged, so Welch and a team of ex-leaders' Work-Out, a program in which line executives ran their own workshops on leading change. We also developed a program that prepared the top 10,000 GE leaders to teach and lead change.

The point is that organizations need multiple mechanisms of leading and teaching that along the way must yield growth and/or productivity improvements.

#### What is the most important thing you try to teach leaders?

I try to teach them to articulate what I call their "teachable point of view." That is, what are their strategic ideas for their organization? What values do they expect members of the organization to exhibit? What is their emotional energy, in terms of energizing thousands of people around their ideas and values? And what is their edge — how do they plan to make the tough yin-yang calls on business and people issues? In addition, I help them design and prepare them to teach midday workshops with their own people.

A lot of leadership advice is too high-minded to be readily applied. But not the advice of Noel Tichy, former head of General Electric Co.'s famed leadership development center, Crotonville, as well as a professor of organization and management at the University of Michigan. Tichy has also written many leadership books, including *Circle of Leadership* and *The Leadership Engine*. Tichy's focus is on what leaders can do to ensure that they develop other leaders while still yielding a business return. *Computerworld* contributing writer Mary Brandel asked Tichy to pass along some wisdom to today's IT leaders.

#### What is the best thing a leader can do?

Be a teacher and develop other leaders while the organization keeps winning. The worst people in the world to do this are consultants, professionals and training staff. It is up to

“Organizations need multiple mechanisms of leading and teaching that along the way must yield growth.”

Noel Tichy,  
Professor of Management,  
University of Michigan



Rick Davidson, CO  
Mampower Inc.

★ **THE LESSON:** You need a high level of personal integrity. As you move higher up in the organization, your actions gain more meaning and impact, so you need to be true to your core, which is shaped by your values, upbringing and business experiences. You've got to stick to that core, and when you don't, you can get negative or undesirable outcomes.

My whole philosophy centers on the impact I have on others. I believe it's important to be honest and transparent and to establish trust between management and employees. People follow leaders because the leader can take them places they can't go on their own. And if you violate that trust, people won't follow you anymore.

#### ▶ HOW I LEARNED IT:

I once asked a respected leader what advice he'd give to young executives. He said, "Always do what's right for the company first, what's right for the workgroup second and what's right for you third." If you practice this, people will never challenge your motives. It all comes back to staying true to your core and having a high level of personal integrity.

#### ▶ HOW I PASS IT ON TO EMPLOYEES:

Role models need to walk the talk. Many of our jobs have stressful moments where you have to make decisions, and sometimes the right decision is more challenging. People are expecting you to do the right thing, and you absolutely have to, even if it's difficult.

Leaders must be accountable and take responsibility for their actions. There might be cases where I am at fault, and at these times more than ever, I have to be transparent and truthful. This neutralizes the situation so that we can focus on finding solutions to the problem. As a leader, I create the work environment, and I hire people who have the same sense of knowing their core. ▶

Brandel is a Computerworld contributing writer in Newton, Mass. Contact her at marybrandel@verizon.net.



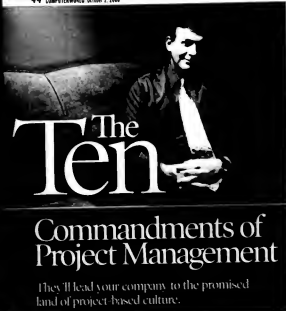
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COMPUTERWORLD



# The Ten

## Commandments of Project Management

They'll lead your company to the promised land of project-based culture.

In our increasingly project-centric world, the productivity to be gained by good project management is far too promising to ignore. But for most companies, shifting to a project-oriented management structure represents great change, and people resist change, regardless of the benefits that it may bring. Rules and guidelines are needed so that everyone's assumptions are clear, and everyone knows the rules.

### 1. THOU SHALT NARROW PROJECT SCOPE

It's a common mistake to think that project management is a magic formula that will solve all your problems. In reality, project management is a tool that can be used to manage a project, but it's not a magic formula. It's a process that can be used to manage a project, but it's not a magic formula. It's a process that can be used to manage a project, but it's not a magic formula.

### 2. THOU SHALT NOT SUFFER A FAT TEAM

The best way to get off to a good start is to estimate that the project team is the right size. Larger teams are more difficult to motivate and manage, and

personalities can get in the way of the work. There is no optimum team size, though a good rule of thumb is a role for every person and a person for every role. But if team members need to play more than one role, that's OK. If you are on the side of a smaller team,

### 3. THOU SHALT REQUIRE FULL-TIME BUSINESS PARTICIPATION

To ensure that the desired results are delivered, the business perspective must be represented on a full-time basis. Moreover, if business leaders want the best and brightest from IT, working on their initiatives, they need to provide the same from the business side. By committing full-time resources to the project, business leaders confirm that project work is important.

## IT MENTOR

### 4. THOU SHALT ESTABLISH PROJECT REVIEW PANELS

A project review panel is a project team's governing body, addressing issues of business policy and strategy. It meets twice a week, assessing in the moment and avoidance of project roadblocks and pitfalls. Typically, midlevel business and IT managers from the involved areas participate in biweekly project status meetings. To ensure flow and continuity, any problems identified

during these meetings are assigned to project review panelists who address them while the project team carries on with its work.

### 5. THOU SHALT NOT PROVOKE BURNOUT

It's not unusual for project staff to become both mentally and physically exhausted by the stress and struggle of the work. Be sensitive to this and take precautions to avoid it. One common contributor to burnout is serial project assignments. Organizations tend to assign the "usual suspects" to every high-visibility initiative. If you find that certain people come off one project only to be assigned immediately to another, you may want to consider creating some policies that limit or monitor such staff use.

### 6. THOU SHALT SEEK OUTSIDE ASSISTANCE AS NEEDED

Using outside project experts is another way to prevent burnout. Besides augmenting project teams, outsiders can often provide valuable new ideas, perspective, and energy. It's essential to bring the right consulting support into a project at the right time. Specialized technical or business expertise is one type of support; project management expertise is another. Be sure to consider where a given project team is in both its project plan and overall experience curve before deciding on a specific type of external resource.

### 7. THOU SHALT EMPOWER PROJECT TEAMS

Project teams struggling to meet deadlines should not be expected to perform pro forma activities such as filling time sheets or attending department status meetings. Rather, they should be empowered to do whatever it takes to get a superior job completed on time and within budget. People will work harder in a trusting environment where expectations are well understood and individual initiative is valued.

### 8. THOU SHALT USE PROJECT MANAGEMENT TOOLS

Mundane project management work can be automated. Look for tools that offer project tracking, task management, workflow administration and resource-analysis support on an intranet-based platform that promotes information-sharing and communication. But remember, using technologies that add another layer of complexity to an already challenging project is not a good idea.

### 9. THOU SHALT REWARD SUCCESS

All project participants should be recognized in some positive way for their toil and personal sacrifice. The rewards need not be extravagant; sometimes a sincere letter of commendation from a corporate officer is enough. More significant forms of gratitude such as tickets to ballgames, theater evenings, or an afternoon and night at a business school should be considered if results warrant them.

### 10. THOU SHALT NOT TOLERATE QUICK-AND-DIRTY WORK EFFORTS

Solid project management policies should dictate the temptation to indulge in quick-and-dirty project work, which only leads to error, waste, rework and frustration. ■

Kerr is a former CEO and current president of Kerr Consulting Group, a national firm committed to his at Kerr Consulting Group Inc.

## Beyond The Project

**PORTFOLIO-BASED** project management calls for work to be organized into projects and programs and managed collectively, like a portfolio of stocks. In this way, the initiatives that offer the greatest potential benefit to the organization are started and funded, while those that don't are discarded as new ideas that can be added to the portfolio.

If there is one overarching operating principle that every organization interested in project portfolio management should put into place, it is this: All work to be done within the company must be included in a project or program within the corporate strategic plan.

By adopting this principle, a company ensures that all initiatives are fully understood by the management team and that potential organizational conflicts have been considered as part of corporate strategy. In this way, the company is better positioned to aggressively manage its resources and is less likely to squander assets on ill-conceived ideas.

This comprehensive and objective way of handling projects and programs will yield benefits far beyond the obvious as increased discipline and rigor extend throughout the organization.

Adapted by the author from *The Best Practices Enterprise* (J. Ross Publishing, 2006) by James M. Kerr.



# The Commandments of Project Management

In our increasingly project-centric world, the productivity to be gained by good project management is far too promising to ignore. But for most companies, shifting to a project-oriented management structure represents great change, and people resist change, regardless of the benefits that it may bring. Rules and guidelines are needed, so I've devised these commandments. By following them, your company can position itself to enter the promised land of project-based culture.

## I THOU SHALT NARROW PROJECT SCOPE

Nothing is worse than the never-ending project. It can suck up resources and exhaust even the most resilient teams. To keep projects tight and focused, carve larger efforts into smaller projects that have achievable deliverables and can meet deadlines. In the long run, a series of small wins has more impact on the organization than a big bang that never sounds.

## II THOU SHALT NOT SUFFER A BIG TEAM

The best way to get off to a good start is to ensure that the project team is the right size. Larger teams are more difficult to motivate and manage, and

personalities can get in the way of the work. There is no optimum team size, though a good rule of thumb is a role for every person and a person for every role. But if team members need to play more than one role, that's OK. If you err, err on the side of a smaller team.

## III THOU SHALT RESOLVE FULL-TIME BUSINESS PARTICIPATION

To ensure that the desired results are delivered, the business perspective must be represented on a full-time basis. Moreover, if business leaders want the best and brightest from IT working on their initiatives, they need to provide the same from the business side. By committing full-time resources to

every project, business leaders confirm that project work is important.

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Solid project management policies should obviate the temptation to indulge in quick-and-dirty project work, which only leads to error, waste, rework and frustration. »

Kerr is a former CEO and current president of Kerr Consulting Group in Cromwell, Conn. Contact him at [jkerr@kerr-consulting-group.com](mailto:jkerr@kerr-consulting-group.com).

## Beyond The Project

PROJECT-BASED project management calls for IT work to be organized into projects and programs and managed collectively. In a portfolio of efforts, in this way, the initiatives that offer the greatest potential benefit to the organization are shifted and halted, while those that don't are discarded in favor of new ones that can be added to the portfolio.

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By adopting this principle, a company ensures that all initiatives are fully understood by the management team and that potential organizational conflicts have been anticipated. Part of corporate priority setting, in this sense, is to ensure a better positioned to aggressively manage its resources and is less likely to squander assets on ill-conceived ideas. This comprehensive and objective way of handling projects and programs opportunities will yield benefits far beyond the obvious or business discipline and rigor extend throughout the organization.

Adapted by the author from, *The First Step Toward Success* (J. Ross Pittman, 1993) by J. Ross Pittman.

**APPLICATIONS  
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# Career Watch

## IT: The Next Generation

More than 1,600 CEOs at U.S. companies with 100 or more employees were asked if they are taking steps to identify and prepare IT staffers to move into managerial roles.



SOURCE: ROBERT HALF TECHNOLOGY, JULY 2006

Those who answered you were also asked to specify which of the following steps they were implementing:



NOTE: MULTIPLE RESPONSES ALLOWED.

## You Sank My Supply Chain!

**IT AND BUSINESS LEADERS** also stress how important it is for IT workers to grasp basic economic concepts and to fully understand an organization's charter in order to effectively apply IT to business strategies. Part of the challenge, according to some CEOs, is that many colleges and universities focus too much on the technical development of computer science students while overlooking the need to provide them with practical business experience.

Four students at Carnegie Mellon University's Entertainment Technology Center have taken a novel approach to the problem. For their spring 2006 project, they created a networked, multiplayer business simulation game that's aimed at getting computer science students more engaged in Economics 101-type concepts.

In the computer-based game, players own companies in a supply chain that process raw materials into intermediate and end products. Players acquire resources, produce goods, and buy, sell and trade with other players and nonplayer entities.

"We thought maybe we could make a strategy game that people could get into and learn something about economics," says Lucas Mechels, one of the CMU students who worked on the game, which is designed for five to 15 players. The students succeeded. The game immerses players in basic economic concepts.

The other game designers are Howard Brainer, Abrahm R. Delgado and Sam Sparo.

—THOMAS HOFFMAN

### ASK A PREMIER 100 IT LEADER

John Sullivan



**Q** My goal is to become a leader in the IT sector. Is it better to be specialized or to have knowledge of various technologies? It depends on your particular interests and goals. One way to be viewed as a leader or an expert is to develop very strong technical knowledge of a popular technology. The challenge with this strategy is that you have to evolve with the technology, changing expertise as the environment changes.

Knowing a variety of technologies also has its benefits, primarily that you will be well positioned to be a technical lead — architecting or combining disparate technologies to create value.

But some requirements for a leader are missing from your question. The ability to understand the business or operation you are trying to improve, strong people skills and an ability to communicate to large groups. To lead, you must have more than knowledge — the people around you must follow you willingly.

Good luck, and I hope you never lose sight of your goal.

**Q** I am taking computer networking classes at a junior college and am worried that I will have a hard time finding a job when I graduate in the spring. This is a totally new career for me; I previously worked in restaurants

and a correctional facility. I am worried that I will not be able to find a good job unless I complete a four-year degree, but I need to get out into the workforce since I am a single mom of five. I would appreciate your input. It, during the course of your work, you have developed sufficient skills to work not only on networks but also as a help desk analyst or desktop support professional, then I wouldn't worry.

Your first step should be to try to find an entry-level job in networking. Cisco certifications, especially the higher ones, are still valued by employers.

If you have no luck, look for a position in a midsize IT department as a help desk or desktop support person. Demonstrate technical proficiency, a willingness to work hard and excellent customer service skills, and doors will open up. Don't be shy about stating your desire for something more. I'm always happy when we can promote people from these jobs to their desired career paths when they prove they are capable and are good team players.

Good luck — and good grades, it helps enormously.

**Q** What are the top two or three technical skills that a person will need for the next 10 years or so to stay employed in an IT profession that's being hit by offshoring and downsizing? The No. 1 skill is knowledge of the business you choose to support. No. 2 is a desire to provide excellent customer service. No. 3 is understanding how your skills help the organization you work for. No. 4 is a commitment to continuous learning — not guided by your boss, but through your own desire and motivation.

Finally, the specific skill that I view as most needed is the ability to know a number of technologies at a sufficient level to develop into a technical lead and, over time, a technical project manager. If I had to choose one, it would be .Net. This may not lead to the highest salary, but it should prove over the short course to be the most marketable.

This does not mean that there aren't other avenues — skills in the areas of security, networking, databases and other languages are still needed.

### THE BIG NUMBER

74%

Percentage of IT workers who said in July that they were happy with their jobs, according to Hudson Talent Management's monthly survey of about 8,000 workers (80 IT sample is smaller). That contrasts sharply with survey results from the U.K., where StaffSoft found that 70% of IT professionals who they had another job, is it something in the sector, or something in the way the question was asked?

GRAPH COMPILED BY JAMIE ECKLE



# Career Watch

## IT: The Next Generation



SOURCE: ROBERT HALF TECHNOLOGY, JULY 2000

**IT AND BUSINESS LEADERS** often stress how important it is for IT workers to grasp basic economic concepts and to fully understand an organization's character in order to effectively apply IT to business strategies. Part of the challenge, according to senior CEOs, is that many colleges and universities focus too much on the technical development of computer science students while overlooking the need to provide them with practical business experience.

Four students at Carnegie Mellon University's Entertainment Technology Center have taken a new approach to the problem. For their spring 2000 project, they created a networked, multiplayer business simulation game that's aimed at getting computer science students more engaged in Economics 101-type concepts.

In the computer-based game, players own companies in a supply chain that process raw materials into intermediate and end products. Players acquire resources, produce goods, and buy, sell and trade with other players and nonplayer entities.

"We thought maybe we could make a strategy game that people could get into and learn something about economics," says Lucas Mischke, one of the ETC students who worked on the game, which is designed for five to 15 players. The students succeeded: The game becomes players' basic economic concepts.

This other game designers are Howard Starkov, Matt R. Delgado and Sam Spivey.

—THOMAS HOFFMAN

### ASK A PREMIER 100 IT LEADER



**Q** My goal is to become a leader in the IT sector. Is it better to be specialized or to have knowledge of various technologies? It depends on your particular interests and goals. One way to be viewed as a leader or an expert is to develop very strong technical knowledge of a popular technology. The challenge with this strategy is that you have to evolve with the technology, changing expertise as the environment changes.

Knowing a variety of technologies also has its benefits, primarily that you will be well positioned to be a technical lead—architecting or combining disparate technologies to create value.

But some requirements for a leader are missing from your question: the ability to understand the business or operation you are trying to improve, strong people skills and an ability to communicate to large groups. To lead, you must have more than knowledge—the people around you must follow you willingly.

Good luck, and I hope you never lose sight of your goal.

**Q** I am taking computer networking classes at a junior college and am worried that I will have a hard time finding a job when I graduate in the spring. This is a totally new career for me; I previously worked in restaurants

and a correctional facility. I am worried that I will not be able to find a good job unless I complete a four-year degree, but I need to get out into the workforce since I am a single mom of three. I would appreciate your input. It, during the course of your work, you have developed sufficient skills to work not only on networks but also as a help desk analyst or desktop support professional, then I wouldn't worry.

Your first step should be to try to find an entry-level job in networking. Cisco certifications, especially the higher ones, are still valued by employers.

If you have no luck, look for a position in a midsize IT department as a help desk or desktop support person. Demonstrate technical proficiency, a willingness to work hard and excellent customer service skills, and doors will open up. Don't be shy about stating your desire for something more. I'm always happy when we can promote people from these jobs to their desired career paths when they prove they are capable and are good employees.

Good luck—and get great grades; it helps enormously.

**Q** What are the top two or three technical skills that a person will need for the next 10 years or so to stay employed in an IT profession that's being hit by offshoring and downsizing? The No. 1 skill is knowledge of the business you choose to support. No. 2 is a desire to provide excellent customer service. No. 3 is understanding how your skills help the organization you work for. No. 4 is a commitment to continuous learning—not guided by your boss, but through your own desire and motivation.

Finally, the specific skill that I view as most needed is the ability to know a number of technologies at a sufficient level to develop into a technical lead and, over time, a technical project manager. If I had to choose one, it would be .Net. This may not lead to the highest salary, but it should prove over the short course to be the most marketable. This does not mean that there aren't other avenues—skills in the areas of security, networking, databases and other languages are still needed.

THE BIG NUMBER

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PAGE COMPILED BY JAMIE ECKLE



**IBM.**

INFRASTRUCTURE LOG

DAY 22: We've taken "add an app, add a server" to the next level: complete insanity. The servers require constant attention. Our fingers are cramping from rebooting. Haven't left the office in days.

DAY 23: "Insane" doesn't begin to describe it. Around-the-clock maintenance is turning our staff into an army of zombies. Hey, even the undead get time and a half.

I don't want to spend another night in the server room. I want control. I want an i.



# Why Wait?

**Authors Esther Derby and Diana Larsen suggest conducting project retrospectives midstream - before it's too late.**

Project management experts like to tout the benefits of conducting postmortem reviews to determine whether projects met their goals and to learn lessons that can be applied to future efforts.

Although postmortems are useful, they don't enable project teams to identify and correct problems during a project. To get at problems in real time, Esther Derby and Diana Larsen advocate periodic reviews between project iterations.

In their recently published book,

*Agile Retrospectives (The Pragmatic Bookshelf, \$29.95)*, Derby, principal at Esther Derby Associates Inc. in Minneapolis, and Larsen, a partner at FutureWorks Consulting LLC in Portland, Ore., say that real-time retrospectives provide technology benefits like catching software defects quickly, as well as management benefits like preventing friction among members of a team. They recently discussed the approach with Computerworld's Thomas Hoffman.

**What are the biggest benefits of agile retrospectives?**

**DERBY:** Agile retrospectives help teams deal with conflict before it becomes a blowup. That ability to address conflict results in creating a sense of trust between the team members and provides them the ability to handle conflicts when they come up.

**Many IT managers say they lack the time for postmortems. How can they be persuaded to try ongoing retrospectives?**

**LARSEN:** As a place to start, emphasize that this is an important part of the continuous process improvement effort for software development. Most organizations and managers have bought into the notion that continuous process improvement is important. When you conduct retrospectives, you have a way of improving lots of things: methods, teamwork and processes, which work together toward improving productivity.

**Managers will argue that conducting retrospectives during the course of a project will lengthen it unnecessarily or tie up resources.**

**LARSEN:** Scrum [an agile software development methodology] uses the term "inspect and adapt"—this idea that we're continually looking at what we're doing and adjusting it so it makes sense. The beauty of this is that you

may approach a team and ask, "Can we try a retrospective just for the next iteration? We're not making wholesale changes for the length of the project, just this one time." That's such a low threshold of investment by the team that they'll say, "OK, we'll give you an hour or a half-hour."

It segues so nicely into planning the next iteration and reduces the amount

of time you need for planning. That approach makes this a low threshold for risk and makes it an easier sell job than a postmortem at the end of a project where you're committing two or three days of time.

**DERBY:** I sometimes ask people this question: If you knew at the beginning of the week what you know now, how much time could you have saved? If you go back and look at [the past week], you can find some ways to save yourself time.

**Your book stresses that team members should explore their feelings during a project. Why is there so much emphasis on this?**

**DERBY:** Engineers try to avoid the "F word"—feelings—when they're working with each other. But if you don't bring this up in some way, then people won't talk about the things that are truly important to them. When you leave that out, you get a very sterile analysis.

**LARSEN:** When people communicate on a team, there's more than just rational thinking going on. To ignore that is to ignore a big piece of what's going on.

**DERBY:** Ask members of the team, "What's going to have the biggest impact on us?" or "What will we have the most energy to work on?" I've seen teams where they've ID'd the most important things to work on, but if they're not emotionally invested or they don't have the energy to work on it, it's not going to go well. There's more and more research that says that people don't decide things rationally. It's all emotionally decided, and we rationalize it later.

**What are some common misconceptions that people have the first time they try a retrospective?**

**LARSEN:** It tends to fall into two buckets. They overestimate what can be accomplished in a one-iteration retrospective, or they severely underestimate what can be accomplished. I have bumped into people who believe they can turn around everything that's wrong in an organization in a one-hour retrospective, and that's way overestimating what's possible. It's key to set an appropriate goal.

**DERBY:** If you can solve one problem a week, you go a long way toward solving a lot of problems.

## Avoiding the Retrospective

Teams who identify external groups as the source of their ills and want those people to change and up-treat. Waiting for other people to change is an exercise in futility. The most powerful place to start changes is within the team. Even when your team doesn't have direct control, your team can take action to influence or change their own response.

Change happens in the course of normal work. Teams who believe their retrospectives are a waste of time often keep their improvement plans completely separate from their daily work plans. When the plans are separate, no one finds time to do the "extra" work.

This excerpt from *Agile Retrospectives*, by Esther Derby and Diana Larsen, is published with the permission of the publishers, The Pragmatic Programmers LLC.

**Do agile retrospectives negate the need for postmortems?**

**DERBY:** I think you learn different things at different points. In agile retrospectives, you look at issues that occurred during a particular iteration. After a release, you might look at other things.





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PAUL GLEN

# How Indispensable Should You Be?

**A**FTER World War II, the vacuum cleaner began its meteoric rise as an American household appliance. It was sold as an amazing labor-saving device to liberate women from the dreary chore of rug beating. And with that promise, it quickly became a fixture in the homes of the rapidly growing middle class.

For years afterward, it was assumed that vacuum cleaners did just what we expected: saved labor. But more recently, scholars have reinterpreted their true

effects. It seems that rather than saving time for other pursuits, vacuum cleaners merely raised the standards for home cleanliness. Women didn't spend less time on household chores; they were just expected to tolerate less dust than before. If they saved time, it was devoted to other cleaning tasks or vacuuming more frequently.

As I watch the march of personal communication technology, I imagine scholars 50 years from now coming to much the same conclusions. We may not be getting exactly what we expect when we adopt these appliances, especially as tools of management. I'm not saying that these things are useless, but that we don't really appreciate what's happening.

Let's think about it for a moment. First, there were papers that allowed us to notify people who we were trying to reach. Fairly quick, but very little information, and response was problematic. Then cell phones made it possible to reach someone directly. More immediacy, more information, two-way, but only voice. Then came e-mail. More information, more types of information, asynchronous delivery, storage, but no mobile delivery. BlackBerries offer the advantage of asyn-



chronous communication with the immediacy and mobility that e-mail didn't have. Different types of information with storage. And don't get me started on instant messaging. Progress. Yeah, right.

We buy these things based on the ideas that more communication is better and increasing immediacy is essential. We live in a round-the-clock, hyperconnected, globalized business environment. And, of course, most of us in IT management are technology people first and foremost, so we like to leverage (read "play with")

new tools of the managerial trade to meet these competitive pressures.

So, as with vacuums, we incorporate them into our daily routines, and before long, they become seemingly indispensable. And managerial style adapts to the communication devices available, just as cleanliness standards adapted to housework tools. Now we can be in the loop anytime, anywhere, and because we can, we must.

But is this progress? I'm not so sure. I've sensed that as managers have increasingly leaned on these grungies, they forget to ask whether the resulting "benefits" are really valuable. Should managers be available all the

time in any place? Is this good for managers? Their staffs? Their organizations? I'm not sure that it serves any of the stakeholders particularly well.

It strikes me that these tools are encouraging a cyclical co-dependence. Managers, in a well-meaning attempt to be responsive and available to their stuffs, glom onto a tool. Then the staffers start to use it, expecting the boss to be there whenever they need information, decisions, protection or comfort. And the more immediately and regularly the boss responds, the more they come to rely on that availability. Before long, a staff member's taking initiative means contacting the boss right away with something rather than analyzing the options and making decisions close to the action.

Often, staffers like this setup. It's lower-risk for them and requires less work. Whenever something comes up, just contact the boss. And bosses both love and loathe this sort of arrangement. On the positive side, they feel needed. Crisis environments are engaging and exciting. The seeming urgency of everything offers quite a rush and protects them from the difficult, slow and ambiguous nature of long-term managerial work.

But on the negative side, bosses feel needed. They begin to recognize the burden of having a staff that delegates even the most mundane details back up to the boss. But having set the expectation, they're already in the trap. So the more they're available, the more they must be so.

It's important to reflect carefully on how you use these powerful new tools of management. Train yourself and your staff to respect the boundaries of your roles to ensure that the tools serve you, and not the other way around. Otherwise, you'll end up vacuuming up everyone else's work and ignoring your own. ■

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**\_INFRASTRUCTURE LOG**

**\_DAY 59:** The infrastructure is growing out of control. Nothing's being used to capacity. It costs a ton to manage, both in time and resources. All we do is react to problems. I told Gil I'm tired of spending my days putting out fires. He said he'd pitch in.

**\_Gil** brought in a fire hose. Everyone is sopping wet, and the data center is an electrified wading pool. We've got to find something better than H<sub>2</sub>O.





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